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Human Action and Socially-Optimal Conservation: A Misesian Inquiry into the Hotelling Principle — **John Brätland**

The Equations of Mathematical Economics and the Problem of Economic Calculation in a Socialist State — **Ludwig von Mises**

The Austrian Market Share in the Marketplace for Ideas, 1871–2025 — **Richard Vedder and Lowell Gallaway**

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EDITORIAL

Starting with this issue, I have assumed the position of sole editor of the *Quarterly Journal of Austrian Economics*. Jeffrey M. Herbener and Mark Thornton continue as Associate Editor and Book Review Editor, respectively.

As before the journal will publish articles dealing with a wide range of issues in the broad Austrian tradition that is exemplified in the works of Ludwig von Mises, F.A. Hayek, Murray Rothbard and Israel Kirzner. The primary purpose of the journal continues to be to advance the frontiers of Austrian economic theory. In pursuit of this aim we are especially interested in publishing articles elaborating, applying or criticizing Mengerian price theory, which constitutes the distinctive core of Austrian economics and whose development has been relatively neglected since Mises's restatement in *Human Action* and Rothbard's comprehensive elaboration in *Man, Economy, and State*. The journal also welcomes articles on monetary theory, the theory of monetary calculation, capital theory, and the theory of entrepreneurship, all of which also offer scope for further extension or refinement. Submissions on the method, doctrinal development and policy implications of Austrian economics are also welcome. Since the journal aspires to serve as a forum for vigorously and constructively debating unsettled issues in Austrian economics, we encourage submission of comments on and replies to published articles. All submissions will be refereed in a rigorously fair and timely manner.

The journal will also seek to actively engage the interest of mainstream economists by publishing articles subjecting neoclassical doctrine to critical analysis. As an example, there appears in this issue a Misesian critique of the Hotelling Principle as the standard of social efficiency in the use of depletable natural resources. Also, we intend to publish occasional symposia in which an exchange of views takes place between Austrian and mainstream economists on issues of mutual interest. Accordingly, this issue features the first part of a symposium on publishing in Austrian economics. Finally, since the journal has access to the papers of both Rothbard and Mises, we look forward with great pleasure to periodically making available to readers of the *QJAE* papers by these two giants of Austrian economics that have not previously appeared in print or have appeared only in foreign-language publications. For instance, this issue of the journal includes a paper by Mises on economic calculation under socialism, which, up to now, has been available only in French. In this paper, Mises, for the first and only time, explicitly addressed the differences between himself and Hayek in their respective critiques of socialist central planning.

– Joseph T. Salerno

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HUMAN ACTION AND SOCIALLY-OPTIMAL CONSERVATION: A MISESIAN INQUIRY INTO THE HOTELLING PRINCIPLE

JOHN BRÄTLAND

As defined by the Hotelling *r* Percent Principle (hereafter, the Hotelling Principle), "socially-optimal conservation" of an exhaustible resource is determined by rates of extraction that allow marginal scarcity rent (equilibrium price net of marginal extraction cost) for the resource to grow at a rate equal to an equilibrium rate of interest.[1] Socially-optimal conservation is achieved as individual extractive enterprises apply the Hotelling Principle and select rates of extraction that maximize the present value of scarcity rent yielded by the resource. This prescriptive principle emerged out of Harold Hotelling's attempt to demonstrate *mathematically* how a society optimally conserves a resource assumed to be of a known fixed stock.[2] Optimal conservation is assumed to be a potentially observable state and thus empirically verifiable; hence, neoclassical economists hail the Hotelling Principle as being prospectively operational with the promise of providing a normative basis for "*ideal* [optimal] *standards of resource use* by comparisons with which actual outcomes may be judged and on which policies may be based."[3]

JOHN BRÄTLAND is an economist with the U.S. Department of the Interior and acknowledges that the views expressed in the paper are strictly his own.

[1]The "Hotelling Principle" refers to theoretical results obtained in a famous article by Harold Hotelling (1931). Optimal conservation also requires that the resource be totally depleted at the time that the resource attains its maximum price. This latter condition of optimal conservation is explained further below. Hotelling's paper 1931 was arguably an outgrowth of his earlier paper on the theory of depreciation (1925). This earlier Hotelling paper is, of course, open to many of the criticisms leveled in this present article.

[2]More recent literature on exhaustible resource economics challenges the assumptions of exhaustibility (see Adelman 1993; 1995). To some extent, even exhaustible resources are renewable through exploration and discovery. However, this issue is not addressed here.

[3]The term "operational" has a history in the debates of "positivist" economic methodology. Without intending to tread near that methodological morass, the author simply notes that this definition of operational is based on the comments expressed by P.S. Dasgupta and Geoffery Heal (1979, p. 479). While these authors acknowledge difficulties in applying the Hotelling Principle as an operational standard, they are clear in stating their view that such a goal represents an appropriate attempted use of the Hotelling Principle.

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This article explores the answers to two fundamental questions concerning the Hotelling Principle: first, can the Hotelling Principle provide an empirically-based framework within which a "regulating authority" is able to prescribe a program of "optimal extractive conservation?" Second, as it is intended to apply to society as a whole, can the notion of socially-optimal conservation, have any coherent meaning in a world populated by acting human beings? So called mainstream economists would be inclined to answer yes to both questions.

PRAXEOLOGY, EMPIRICISM, AND MATHEMATICAL ECONOMICS

The above issues are examined within the methodological framework developed by Ludwig von Mises, Murray N. Rothbard and other members of the Austrian School of economics. Economic method, as a discipline, provides the framework within which one examines and defines the logical foundation upon which legitimate economic science is based. Ludwig von Mises has labeled the scientific method of the Austrian School of economics as *praxeology*. *Praxeology* means (roughly), the logic of action and is based on the insight that all economic propositions are deductively derived from the *axiom of action*.[4] This axiom states simply that human beings act to achieve the most highly-ranked, subjectively defined goals and employ means to attain these ends that involve the least sacrifice (subjectively perceived cost). Under Austrian economic method, other economic propositions are derived deductively from this axiom. In this sense, praxeology is an explicit rejection of the inductive method found in *empiricism* and eschews the notion contained in the motto of the Econometric Society: *science is measurement* (Mises 1998, pp. 347–48).

Empiricism, as applied to economics, is based upon the widely accepted notion that no knowledge of reality can be deductively gleaned and that economic theory must be verifiable or falsifiable by observational experience (Hoppe 1995, pp. 28–29). In this sense, knowledge in the social sciences is always contingent in the sense that it is always subject to be overthrown by the testing of hypotheses with the most recent historical information available. This standard of science is most cogently captured by James Buchanan in the following statement:

> the science must have objective, empirical content. Something must be measurable—at least conceptually—which will allow either the corroboration or the refutation of central propositions. The basic elements of economic theory are, of course, the actions of human beings. The science consists of efforts to predict the effects on human behavior induced by specific changes in environment. Operationality dictates that the behavioral responses be objectively measurable. (Buchanan 1969, pp. 38–39)

By this standard, if testing fails to "falsify," the theory is assumed to be a valid predictor of future action. In this empirical screening of economic theory, no more rationality need be attributed to man than that which may be imputed to a tank of plankton or to a microbe. Under empiricism, the scientific method appropriately

[4]For the development of the application of praxeology to economic science see Mises (1957; 1960; 1962; 1998), Rothbard (1962; 1997b; 1997c), and Hoppe (1995).

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applied to the physical sciences is assumed to apply to the social sciences even though man is a conscious, thinking, goal-oriented entity while the objects of the physical sciences possess none of these characteristics. Praxeology makes clear that the failure to draw the latter distinction results in an application of an absurd method in economics. The need to make this distinction has prompted Austrian economists to apply a scientific method that convincingly deals with human action in the passing of time.

However, as the following discussion will show, Hotelling's mathematical economics negated human action and any realistic treatment of time; he relied upon the grossly unrealistic neoclassical assumptions of perfect foresight and inter-temporal equilibrium. The implications of these assumptions are that the future is like the past; time does not exist; the market is frozen in a state in which nothing happens because Hotelling implicitly postulated *a world totally devoid of human action.* Nonetheless, the assumptions of perfect foresight and inter-temporal equilibrium have remained an implicit part of all modern-day treatments of the Hotelling Principle—*even those purporting to address uncertainty.* Ludwig von Mises could well have had the Hotelling Principle in mind when he asserted:

> the mathematical method must be rejected not only on account of its barrenness. It is an entirely vicious method, starting from false assumptions and leading to fallacious inferences. Its syllogisms are not only sterile, they divert the mind from the study of real problems and distort the relationships between the various phenomena. (Mises 1998, p. 347)

While Mises's criticism of the mathematical method is undeniably apt, the Hotelling Principle continues to be viewed as one of the crowning achievements of modern economics. It has become the dominant paradigm within which neoclassical economists and policy analysts presume to understand, explain, and "measure" the optimal economic conservation of an exhaustible resource. This article examines the concept of socially-optimal conservation from the fresh and more realistic perspective of praxeology.

Praxeology as a method of economic science is explicitly grounded on the actions of real, individual human beings, replete with ego, fallibility, a rational structure of mind, a capacity for ignorance, and the ability to choose and work to achieve subjectively defined goals.[5] It reflects a clear understanding that man cannot be scientifically studied and understood through the same *empirical* methods employed to study living cells, molecules, atoms, subatomic particles, or any other non-acting entity capable of examination in the observational sciences. (Rothbard 1997b, pp. 28-57) In addressing the foundations of economic science, Ludwig von Mises noted the following:

> Its statements and propositions are not derived from experience. They are like those of logic and mathematics, *a priori*. They are not subject to verification or falsification on

[5]The nature of acting man is most succinctly described in Mises (1998, chap. 1, pp. 11–29). See also Rothbard (1962, chap. 1).

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> the grounds of experience and facts. They are both logically and temporally antecedent to any comprehension of historical [i.e., empirical] facts.[6]

In approaching economic method in this way, Mises (1998, p. 31) explicitly rejected the inductive, empirical method that finds its appropriate application in the natural sciences.

Economic method grounded in the axioms of human action abandons the omniscient, mechanistic *maximizer* that is central in Hotelling's model of objectively definable, exhaustible resource conservation.[7] In the Misesian system, all human action is aimed at or directed toward the future attainment of what the actor views as the most highly valued or most highly ranked end—whether defined monetarily or non-monetarily. The ends chosen by the actor are *not* selected from a predefined set of alternatives that can be apprehended by the external observer. *The alternative ends are subjectively defined only within the conscious and creative mind of the actor.* Praxeology renders no normative judgments with respect to the ends chosen by actors. Action emerges out of an expectation that certain means can be employed to attain chosen ends. In this process, the actor ranks the possible means and strives to gain control over the "subjectively-determined best" ways of achieving the goals sought. Man will always act in the present so as to achieve the greatest future net gain with the means available. Successful action in the present always yields a future *profit* and unsuccessful action yields *losses* (Rothbard 1962, p. 6). However, the nature of the gain is always subjective and certainly not open to observation or scrutiny (Rizzo 1978).

The reality of time in human action is manifested in the actor's awareness of the period elapsing between his actions and the attainment of his chosen objective. Since the length of human life is finite and time is inherently scarce, the actor *always* prefers to attain his most highly ranked goals in the shortest possible time. This *positive time preference* means that voluntary delay in attaining ends must be compensated by the expectation of a sufficient future net gain—subjectively defined. But the actor must also be compensated with a prospective additional future net gain because of the *true or genuine uncertainty* regarding events in the future and the choices made by others. If man were not to experience uncertainty, he would never act; certainty would imply that action is pointless. *All action* is based on the human actor's subjective judgment of future benefits, costs, profits (or losses), and the uncertainty attached to the attainment of chosen ends. As Rothbard has observed in describing the nature of human action, "All his [man's]

[6]As quoted by Hoppe (1995, p. 8). In noting the controversy surrounding the economic method developed by Mises, Hoppe observes that this *a priori* method was also employed by Lionel Robbins (1932).

[7]See Mises (1998, p. 698):

> The mathematical economist, blinded by the prepossession that economics must be constructed according to the pattern of Newtonian mechanics and is open to treatment by mathematical methods, misconstrues entirely the subject of his investigation. He no longer deals with human action but with a soulless mechanism mysteriously activated by forces not open to further analysis.

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actions are of necessity speculations based upon his judgment of the course of future events" (Rothbard 1962, p. 6). As the following discussion will emphasize, the judgments exercised by the actor in addressing uncertainty have definite implications for the possibility of optimal conservation and the operational content of the Hotelling Principle. Moreover, the following discussion shows that other aspects of human action also affect the operational content of the Hotelling Principle and its capacity to suggest optimal conservation policies.

Who is the actor? This question requires a note on terminology since this article addresses human action not only in the context of the extractive enterprise's undertakings but also in a context somewhat broader than exhaustible resource economics." The term *extractive enterprise* is used here to refer to the activities of an existing, ongoing enterprise. However, the term *actor* is employed in the broader context of human action in which planning occurs and resource extraction is only one of several potential alternative uses of the resource-bearing land.

NEOCLASSICAL LOGIC OF THE HOTELLING PRINCIPLE AND ITS VARIANTS

Within the Hotelling framework, an exhaustible resource is a known fixed stock, which means that, as the resource is used, less is available for future use. The fixity of total quantity means that the incremental cost of using the resource in the present must take into account the appraisement of future uses foregone. The present value of this future loss is frequently referred to as "user cost." Hotelling's theory of conservation presumes to define a precise and observable tradeoff between the marginal net benefit of using the resource in the present with the marginal net benefit of having the resource available for future use. Enterprises plan rates of extraction so that the present value of this marginal future net benefit is the same for each future time period in the firm's planning horizon. Optimality is defined in terms of the rate of extraction that allows the actor (and society) to maximize the present value of the exhaustible resource. As extraction proceeds from low-cost to higher-cost deposits, the increasing scarcity is reflected in a continual increase in the discernible and observable marginal scarcity rent (equilibrium price net of marginal extraction cost). There are no profits in this conservation mechanism. For any given resource deposit, extraction is delayed as long as the marginal scarcity rent of the *in situ*[8] resource appears to grow at a rate in excess of the universally-recognized equilibrium rate of interest. If the marginal scarcity rent were not to grow at a rate at least equal to the equilibrium rate of interest, it would be a signal to the actor to develop and produce the resource and to invest the proceeds in order to obtain the higher return yielded by the equilibrium interest rate.[9]

[8]The term *in situ* refers to the un-extracted resource in the ground.

[9]Within a given time period, marginal cost is assumed to increase at an increasing rate with increments in the rate of extraction. The stipulation that marginal cost is increasing at an increasing rate merely establishes that a unique planned rate of extraction in each future time period yields a maximum capital value for the resource deposit. Mathematical economists have attached the

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Optimal conservation is achieved when two conditions are satisfied. First, in the aggregate, extractive enterprises must produce the resource at a rate that results in the marginal scarcity rent of the resource growing at a rate equal to the *equilibrium* rate of interest. Second, optimality in the Hotelling Principle requires that society's resource deposits be totally depleted at the time that the price rises to a level at which the quantity of the resource demanded converges to zero.[10]

Even in models pretending to introduce uncertainty into exhaustible-resource economics, stochastic processes are introduced as exogenous but known (prespecified) components of the analysis.[11] Actors are able to respond parametrically to exogenously-given information for prices, costs, and interest rates. The stochastic behavior of the variables in the model is assumed to occur within the context of some type of *stochastic inter-temporal equilibrium*.[12] Within this equilibrium, the actor is able to maximize the *expected* present value of the resource by selecting, *in the present*, an optimal rate of extraction *for all time periods in the extraction horizon*. Not only are exhaustible resources extracted at an optimal rate, but resource deposits are ranked optimally and brought into production on an optimal schedule that "maximizes the value of the resource to society." Such rankings and schedules would, of course, be recognized as "objectively optimal" by all observers and participants in the market. Even under so called 'stochastic uncertainty,' the future is totally determined, and all expected valuations and appraisements are transparently observable.[13]

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label "second order condition" to this requirement. If this condition were not to hold, a unique, "optimal" rate of planned extraction in each future time period could not be defined.

[10]The second condition of optimality relies on an extremely artificial and unrealistic assumption about the nature of the demand function for the exhaustible resource. The process of extraction by all actors means that the resource supply function for the industry is leftward-shifting as the marginal cost of extraction for each actor increases. Declining extraction for the industry means that the leftward-shifting, industry-supply function intersects the demand function at progressively higher equilibrium prices. The demand function for the resource intersects the price axis, thus establishing a finite, maximum price at which the quantity of the resource demanded dwindles to nothing. The optimal time profile of extraction for actors is achieved if the Hotelling Principle is satisfied and, simultaneously, society's deposits are totally depleted at the time that the quantity demanded declines to zero. Actors have all information on all features of both the present and future supply and demand schedules. The actors have sufficient information to"plan" future extraction of the resource so that the resource is exhausted when quantity demanded is zero. For the likely extent of the actor's likely knowledge of his own demand schedule (Mises 1998, p. 375).

[11]This approach to introducing uncertainty is exemplified by a 1980 paper written by Robert Pindyck (pp. 1203–25). Pindyck introduces stochastic processes into the demand function and a function specifying reserves. The actor has complete knowledge of the functions and the underlying stochastic processes. In this latter sense, this model and similar models do not actually address "real world" uncertainty as it would be manifested in ignorance and changing markets.

[12]See Pindyck (1980). At the end of his paper, he offers the following disclaimer: "Of course resource markets are also affected by other types of uncertainty (e.g., several of the oil exporting countries might suddenly cut production), *and the results of this paper should not be taken too literally*" (emphasis added). In this disclaimer he acknowledges that he has not addressed genuine uncertainty and the phenomenon of economic change.

[13]Mises (1998, p. 329) employed the term "appraisement" to refer to the actors' judgment about the current or future market price.

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One remaining feature of the optimality defined by the Hotelling Principle deserves some note. In the tight inter-temporal equilibrium that is assumed to exist, the scope of human action is constrained such that alternative use of the resource-bearing land plays no role in actors' ranking of resource deposits. In fact the actors do no ranking. Equilibrium in the Hotelling Principle implicitly means that the land is always allocated to its most highly appraised use. That use is, of course, extraction of the resource; in this sense, the Hotelling Principle rests on the assumption of a closed universe in terms of the scope of human action. But in a disequilibrium world in which real human beings act, the issue of alternative uses is a prominent and even dominant consideration in the planned extraction of any resource and in considering any optimality thought to characterize such plans.[14]

DISEQUILIBRIUM, SOURCES OF UNEASINESS AND INDUCEMENTS TO ACTION

The tidy mathematical results obtained by Hotelling emerge from reliance on a neoclassical equilibrium that is assumed to be *objectively apparent* to all observers. However, by reliance on such an equilibrium, the Hotelling Principle has no relevance to the world of acting human beings. In explaining why empirical methods are inappropriate in the social sciences, Mises was particularly critical of the way in which equilibrium concepts are employed in economics. Though Mises was not commenting on the Hotelling Principle in particular, he implicitly addressed the operational emptiness of mathematical economics and its reliance on equilibrium constructs:

> The predilection with which mathematical economists almost exclusively deal . . . the state of "equilibrium" . . . has made people oblivious to the fact that these are unreal, self-contradictory, and imaginary expedients of thought and nothing else. They are certainly not suitable models for the construction of a living society of acting men. (Mises 1998, p. 257)

In order for the Hotelling Principle to have objective content, actors must be in an equilibrium environment in which they feel no sense of unease and see no opportunity for net gain from any sort of incremental action. But prospects of net gain are an ever-present inducement to human action and a constant wellspring of continuous economic change. Sources of uneasiness that prompt action include the following: (A) *market uncertainty,* (B) *unexploited prospects for net monetary gain,*[15] and (C) *unfulfilled non-monetary aspirations.* These inducements to act

[14]A useful and practical discussion of this latter issue as it arises in the leasing of publicly owned mineral lands has been offered by Stephen McDonald. McDonald (1979, pp. 69–72) does not necessarily arrive at the same conclusions as those drawn in this paper, however.

[15]"Unexploited prospects for net monetary gain" would embrace both entrepreneurial profit and any perceived economic gain from any incremental action. Action arises from the actor facing decisions that "are not at the margin." As Wicksteed (1933, p. 37) observed "only at the margin is there a coincidence between the thing gained and the price paid for it . . . when this point is reached, there is equilibrium." Choices made at the margin imply that no unattained, incremental gain can be achieved through additional action. To the extent that this condition

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would necessarily be absent in neoclassical equilibrium; hence, human action and neoclassical equilibrium are starkly contradictory and mutually exclusive.

For the presumed external observer (i.e., analyst, economist, regulating authority, etc.), uncertainty, unexploited profit opportunities, and unfulfilled non-monetary objectives all induce further action and are *all* integral to the market environment in which extraction of the resource is or is not undertaken.[16] Profit opportunities emerge in uncertain, changing environments and are subjectively perceived by actors.[17] But action may also be motivated by non-monetary considerations that can be reflected in market prices of resource-bearing lands. Such motivations may govern the uses to which resource-bearing lands are committed. If these inducements to act are subjectively reckoned by actors can the concept of socially-optimal conservation be given any coherent meaning? The following sections examine this question and explore the concept of optimal resource conservation in a world in which human beings act and the conditions of neoclassical equilibrium are necessarily never attained.[18]

HUMAN ACTION AND THE REALITY OF THE CONSERVATION PROCESS FOR EXISTING EXTRACTIVE ENTERPRISES

An examination of the implications of human action for content of the Hotelling Principle must allow for two different perspectives depending upon whether an extraction enterprise already exists or whether extraction is viewed as one of several potential uses of the resource-bearing land. In the management of the resource, the enterprise would be alert to the exploitation of perceived profit opportunities. However, the scope of human action and subjective choice is

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were ever attained, human action would terminate; *equilibrium would be reached* reflecting a "state of rest." Non-marginal choices imply that the actor is not in an equilibrium and is still striving to avail himself of some subjectively-perceived incremental gain or profit (see, Buchanan 1969, p. 50). The awareness on the part of the actor of "unexploited profit opportunities" necessarily implies "non-marginal" decisionmaking in acting; also, non-marginal decisionmaking in acting implies a type of unexploited profit opportunity. As the following discussion will note, in disequilibrium, no means are available to distinguish between these inducements to action.

[16]One can make the case that objective content also requires that utility functions must exist independently of the act of choice. Also, actors must know their own utility functions. In this connection, Mises (1998, p. 95) makes the following point: "However, one must not forget that the scale of values or wants manifests only in the reality of action. These scales have no independent existence apart from the actual behavior of individuals."

[17]If uncertainty is somehow eliminated, the stipulation that "no perceived profits can exist" becomes essentially moot. With certainty man would never act to capture a profit and with certainty no unexploited profit opportunities could exist.

[18]The equilibrium conditions addressed here are distinct from the concept of the *evenly rotating economy* (ERE). In the ERE, "all economic quantities continue indefinitely in an endless round." Like Hotelling's equilibrium, it is also devoid of human action. But as Rothbard (1962, p. 426) has noted, an exhausting resource and continually increasing resource price makes the ERE impossible. Increasing scarcity of the resource means that each new round cannot be identical to the preceding round. Mises (1998, p. 639) makes a similar point: "There is a need to remember again that . . . in order to integrate into this construction [ERE] mining and drilling we must ascribe to the mines and oil wells a permanent character and must disregard the possibility that any of the mines and wells could be exhausted."

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always much broader in those instances in which the extraction may not be the only way in which the resource-bearing land can be employed. *Unexploited profit opportunities* or *non-monetary goals* may prompt actors to consider and select uses of the land that may entirely foreclose extraction of the resource. Actors who control the resource-bearing lands choose the most highly appraised use from a subjectively established ranking of alternatives. While these types of actions may be equilibrating in that they move the actor *toward* some subjectively-perceived equilibrium, they never define a move *to* an equilibrium. Nonetheless, the broader scope of human action and the alternative opportunities open to actors must be encompassed in any realistic theory of extractive resource conservation. But before considering conservation in its broader context this section examines the scope and implications of human action for existing enterprises.

Market Uncertainty for the Existing Extracting Enterprises

Recent variants of the Hotelling model that presume to quantify the market uncertainty seek to convert the actor's choices to an exercise in "quantifiable risk management." The concept of "risk management" implies that the market uncertainty facing actors involves the equivalent of what Mises (1998, p. 107) has called "class probability." Class probability refers to situations in which one has "sufficient knowledge of a class of events to allow determination of a precise probability but a general ignorance of any single event within the class." However, market phenomena are heterogeneous, non-reproducible, and unique which means that, in the real world, uncertainty facing actors takes on the features of *case probability*. Mises coined the term *case probability* to refer to those situations in which

> we know with regard to a particular event, some of the factors which determine its outcome; but there are other determining factors about which we know nothing. . . . Case probability is a particular feature of our dealing with problems of human action. Here any reference to frequency is inappropriate, as our statements always deal with unique events which as such—i.e., with regard to the problem in question—are not members of any class. (Mises 1998, pp. 110–11)[19]

Since judgments of case probability represent the actor's best conjecture regarding the likelihood of future market events, case probability is "not open to any kind of numerical evaluation" (Mises 1998, p. 113). As Rothbard (1962, p. 437) has aptly noted, "this uncertainty is a subjective feeling ('hunch' or 'estimate') and *cannot be measured in any way*. The efforts of many to apply mathematical 'probability theory' to uncertainty of future events are completely vain." Rothbard (p. 500) goes on to point out that "[e]stimates of future costs, demands, etc., on the part of entrepreneurs are all unique cases of uncertainty where methods of specific understanding and individual judgment of the situation must apply, rather than objectively measurable or insurable 'risk.'"

[19]As a mathematical economist, Nicholas Georgescu-Roegen (1966, p. 63) has offered a definition of uncertainty that is surprisingly concordant with the Misesian concept of *case probability*: "Uncertainty applies to cases where the reason we cannot predict the outcome is that the same event has never been observed in the past and, hence, it may involve a novelty."

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Reckoning of Future Prices, Costs and Rates of Discount in Acting

What will the future price of the extractive resource be? In a world in which human beings act, the case probability associated with future prices brings to bear the actor's subjective judgment of uncertainty (Dasgupta and Heal 1979, p. 247).[20] Any two actors evaluating the same deposit would not necessarily derive and use the same expected prices for any future time period.[21] Moreover, unlike the assumption underlying the Hotelling Principle, actors do not act on the basis of what they think future equilibrium prices will be; as Mises (1998, p. 326) notes, "the activities . . . of actors on the economic scene are not guided by consideration of any such things as equilibrium prices . . . entrepreneurs take into account anticipated future prices, not final prices or equilibrium prices." Mises also notes that:

> The future price which [the actor] has in mind is, to be sure, not the hypothetical equilibrium price. No [actor] has anything to do with equilibrium and equilibrium prices. . . . What impels [the actor] is not the vision of equilibrium prices, but the anticipation of the height of the prices . . . on the date at which it plans to sell. (Mises 1998, p. 707)

One may well add that no market participant or market observer ever knows what an equilibrium price is nor would they recognize such a price were it ever to emerge (Rizzo 1979, p. 78). One concludes that the extractive enterprise's judgments about future price are always conjectural and not amenable to examination or inference by external observers.

In the Hotelling Principle, costs associated with extraction decisions are treated as empirically observable and measurable magnitudes.[22] However, in a world of acting human beings who deal with market uncertainty, their appraisements of opportunity costs are necessarily subjective. Ludwig von Mises ties the

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[20]In their book on exhaustible resource economics, Dasgupta and Heal (1979, p. 246) call attention to the problem created by the fact that different actors see the future differently but then state: "Indeed it is by no means clear what one means when one says that traders expect the future prices of resources to be one thing rather than another. To state it another way, it is not clear how one aggregates individual expectations." The statement seems to suggest expectations, diverse or otherwise, can be observed and measured. This notion is at the heart of the rational expectations hypothesis (REH) which embodies the idea that actors employ forecasts that are the same as the predictions yielded by a universally-used "objective probability distribution." The REH has been exploded by Hoppe (1997, pp. 49–78) and Frydman (1982, pp. 652–68).

[21]Mises (1998, p. 35) addressed the practical aspects of the issue in the following manner: "[T]he market . . . deals with people who are, to different degrees, aware of changes in the data and who, even if they have the same information, appraise it differently . . . different men draw different conclusions in appraising their effects."

[22]During the actual planning of the mine, the level of financial outlay is affected by a broader range of choices other than the selection of the extraction rate. These variables include the planned total volume of the resource to be extracted (scale), the planned commencement date of extraction, and the time period over which planned extraction is to occur. The earlier the planned commencement of extraction, the higher will be the outlay associated with extraction (Alchian 1977, pp. 273–99). Alchian was, of course, not addressing resource extraction but general manufacture.

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concept of cost to the subjective act of choice and notes that "*If costs were a real thing, i.e., a quantity independent of personal value judgments and objectively discernible and measurable, it would be possible for a disinterested arbiter to determine their height. . . . There is no need to dwell further on the absurdity of this idea*" (Mises 1998, p. 393).[23] Mises also notes the subjective, conjectural nature of cost accounts in the face of market uncertainty:

> Cost accounting is therefore not an arithmetical process which can be established and examined by an indifferent umpire. It does not operate with uniquely determined magnitudes which can be found out in an objective way. *Its essential items are the result of an understanding of future conditions, necessarily always colored by the entrepreneur's opinion about the future state of the market.* (Mises 1998, p. 346; emphasis added)

Hence, costs of the existing extractive enterprise clearly have absolutely no operational content as far as any external observer is concerned.

The above observations on cost by Mises have particular relevance to the way in which the extractive enterprise chooses between immediate extraction and delay. The core of truth in the Hotelling Principle is that the extractive enterprise will strike a balance between the marginal scarcity rent (current price of the resource less the marginal extraction cost) obtained by extracting a unity of the resource immediately and its appraisal of the *present value* of the growing marginal scarcity rent that the enterprise may enjoy by delaying extraction until some future time period. A decision to extract in the present means that the discounted future scarcity rent is relinquished; hence, the latter becomes the subjectively-reckoned *user cost* of making such a decision. Delay in extraction would be prompted by a judgment that the present value of user cost is too high: in this act of choice, the resource is conserved. *But what is the rate at which the future is discounted in this act of choice?* As traditionally presented, the Hotelling Principle assumes an objectively measurable "equilibrium interest rate," a datum to which enterprises respond parametrically. But acts of choice, based on judgments of an uncertain future, preclude the emergence of a universally-recognized, objective, equilibrium discount rate amenable to empirical scrutiny.[24] Adjustments of the discount rate

[23] "Costs are a phenomenon of valuation. Costs are the value attached to the most valuable want-satisfaction [foregone] because the means required for its satisfaction are employed for the want-satisfaction the cost of which we are dealing with" (Mises 1998, p. 393).

[24] Roger Garrison (1992, pp. 174–75) comments on the use of interest rates as rates of discount in changing markets:

> under conditions of full competitive equilibrium, costs at the margin are adequately measured by observable market magnitudes. The entrepreneur borrows funds at the market rate of interest and undertakes projects that are just worthwhile. What is popularly called the "cost of capital" refers to both the rate of interest and the rate of return for the entrepreneur whose activities maintain the marginal conditions. But it is precisely these marginal relationships that are nullified by . . . disequilibrium. . . . Disequilibrium drives a wedge between the rate of interest and the newly formed expectations about the rate of return on projects. . . . When capital maintenance turns to capital restructuring, It is a poor entrepreneur whose next best alternative is

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are a subjective magnitude (entrepreneurial component) based on the extractive enterprise's understanding of future uncertainty (Mises 1998, pp. 536-538).[25] These adjustments must be anticipated in advance in order to induce the enterprise to delay extraction or to commit to an alternative investment (Rothbard 1962, pp. 697). Hence, "there is no private rate of discount. In fact, there is a whole panoply of rates, each one representing different appraisals of the nature, size and time-frame adhering to different transactions" (Formaini 1990, p. 51).

Unexploited Net Gains from Action and Non-existence of Social Optimality

Hotelling's optimal conservation implies an equilibrium in which no increments to the present value of the extractive enterprise can be achieved by altering the current rate or planned rate of extraction in any time period. Decisions are made at the margin. The entire time profile of extraction is optimally determined on the basis of the equilibrium price growth, costs, and rates of discount. But in a world of acting human beings, all of this is nonsense because states of rest are counter to the ever-striving nature of human action. "For the final state of rest will never be attained. New disturbing factors will emerge before it is realized.... Every later instant can create new facts altering this final state of rest" (Mises 1998, p. 246). In the market, the extractive enterprise's calculation of maximum present value of the exhaustible resource is always tentative; it pertains to the enterprise's understanding of the future at one moment in time only. But these calculations must change as the new disturbing factors make previously formulated plans obsolescent. As expected prices and costs change, conservation, in the context of resource extraction, requires flexible adjustments in the timing of planned extractive activities. The enterprise must be in a continuous search for a changing maximum present value as market disturbances induce actors to form new expectations. Hence, the extent to which any timing actions can be considered optimal or at the margin can only have relevance within the context of the enterprise's own understanding of the future; no independent perspective on the future of the market exists that would allow the external observer to legitimately judge one timing decision inferior or superior to another.

New, disturbing market factors mean that for the existing extractive enterprise, the prospective net gains are genuinely uncertain. Hence, the prospective net

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the bank rate of interest. . . . The activities of entrepreneurs can no longer be explained in terms of marginal conditions and observable interest rates."

[25]Neoclassicists are forced to acknowledge that *"there is no constant exogenous interest rate to which the rate of capital gains on exhaustible resources can be anchored"* (Dasgupta and Heal 1979, p. 246). Unfortunately, Dasgupta and Heal have little stomach for dealing with the logical implications of their insight. In their struggle to preserve the possibility of objective content, these authors go on to resort to the following ridiculous assumption: "that agents have identical expectations and in particular that they have "point expectations": which is to say that they believe that there is no uncertainty about future prices." In contrast, Nobel Laureate William Sharpe (1985, p. 147) notes that "since both risk and return are subjective estimates dealing with the future, there is ample room for disagreement. People differ in their predictions of the future.... These differences ... make it impossible to categorically measure risk and return and the relationship between them."

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present value from extraction would be an *amalgam* of scarcity rent and entrepreneurial profit. Entrepreneurial profit will always be a conscious goal in any enterprise's plans and actions and may be manifested as a conjectured undervaluation of productive factors in a particular planned extraction enterprise or as an early awareness of likely future shortages of the extractive resource. Profits are realized from the enterprise's "ability to anticipate better than other people the future demand" (Mises 1998, p. 290). The prospects of a net gain in the extraction of the resource "are subjective phenomena, having no 'objective' basis outside the minds of market participants. . . . It is necessary . . . to treat [these prospects] as unique products of subjective valuation."[26]

The reality of entrepreneurial profit means that the actual process by which the exhaustible resource is 'conserved' must allow for this restless, ever-searching entrepreneurial function. "Optimal timing" of extractive activity is always a subjective judgment unique to the extractive enterprise. These judgments will always be driven by a search for a maximum net present value that combines scarcity rent and entrepreneurial profit. The realities of perpetual disturbances and disequilibrium mean that, for the extractive enterprise, scarcity rent and entrepreneurial profit are not even conceptually distinct in an *ex ante* sense. Frank Knight notes "every real income contains elements of both rent and profit. And with uncertainty present (the condition of differentiation [distinction between profit and rent] itself) it is not possible even to determine just how much of any income is of one kind and how much of the other" (Knight 1921, pp. 271–72). Hence, the concept of *ex ante* scarcity rent is subsumed under the larger possibility of entrepreneurial profit or loss in a way that admits no objective separation.[27]

THE BROADER SCOPE OF ACTION AND THE BROADER SCOPE OF CONSERVATION

In the traditional presentations of the Hotelling Principle, the observer views an already-existing, ongoing extractive enterprise in which the range of choice and

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[26]The quotation is from George Selgin's (1990, pp. 39–40) treatment of entrepreneurial profit. George Selgin has observed that:

> It is necessary, therefore . . . to treat entrepreneurial profit opportunities as unique products of subjective valuation and understanding of actors who will seek their exploitation . . . thus action leads to systematic elimination of entrepreneurial profit and loss; it is *equilibrating*. Subjectively defined, equilibration refers to systematic exploitation of profit opportunities as they exist in the understanding of market participants.

[27]The "entrepreneurial profit" addressed in this context appears to fall into the category described as *strategic rent* by Lewin and Phelen.

> Thus strategic rent that follows from a discovered discrepancy between revenue and cost, and is therefore equal to what we normally understand as profit, applies only in disequilibrium situations . . . Disparate expectations provide the opportunity for disparate expectations (for different appraisals of the worth of resources). (1999, p. 10).

They explain their use of the term "strategic" in the following (p. 9) note: "We use the word 'strategic' here in a manner different from its use in Game Theory, where it can refer to actions taken in an equilibrium playing out of certain strategies. We are referring to situations in which outcomes are radically uncertain as requiring strategic decisions.'"

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action are artificially circumscribed by an assumed pre-existing equilibrium. The planning, choosing, and setting aside that would always precede investment in such an enterprise has already been done. But all such enterprises are, at the time of their origins, part of a deliberation in which alternative uses of the resource-bearing lands are ranked. For the actor-owner in the real world, the resource deposit exists in real time and space; it occupies a physical setting in the real world. The actor-owner is aware of the fact that the deposit is part of a larger, spatially-defined land property that he may be able to use for potential alternative, possibly mutually exclusive uses. The owner will rank alternative uses of the resource-bearing land on the basis of the subjectively perceived net gain thought to be obtainable from the respective competing allocations of the property. However, for the individual owner or would-be owners, the definition of net gain may be prompted by a broad range of possible motivations that may range from the acquisitive to the eleemosynary. In choosing the use of the resource-bearing land, the owner may exploit profit opportunities or pursue non-monetary goals, some of which may foreclose future extraction.[28] Hence, one man's conservation may be another man's waste.

Opportunity Costs of Human Action Revisited

The opportunity costs associated with the most highly valued alternative use of these lands *do not* emerge as objective data that would be the same in the eyes of all actors. Appraisement of competing alternative potential uses would be subjective for those actors keeping or seeking possession and control of the land. Hence, what is relinquished or sacrificed in establishing the optimal use of the land is determined by the goal-oriented actions of those willing and able to bear the cost and responsibility of ownership. Human action means that the most highly valued use of resource-bearing land is strictly in the mind of the actor. The net value associated with any chosen use of property is the owner's largest subjective benefit thought to be achievable from his commitment of the resource-bearing land to a particular use, minus his perception of the land's most highly valued relinquished use (Thirlby 1981, p. 215).[29] The subjectivity of these land-use choices clearly forecloses the possibility of empirical scrutiny.

In considering alternative uses for lands bearing an exhaustible resource, the owner *may* appraise the opportunity costs of extraction as any profitable undertaking or highly valued benefit that would be relinquished in committing the lands to extraction. For the landowner facing market uncertainty, the assessment of unexploited monetary profit opportunities foregone will be a subjective conjecture.

[28]In commenting on the content implications of non-monetary motivations, Mises (1998, p. 234) has commented: "To an economist who would try to restrict his investigation to material aspects only, the subject matter of inquiry vanishes as soon as he wants to catch it."

[29]In citing Mises's *Human Action*, G.F. Thirlby (1981, p. 215) notes the following:

> We should notice . . . to indicate what we mean by cost, we should be driven to say that he [the actor] adopts a course of action which maximizes his *value*, and that the cost is the *value*, from an alternative distribution of the "same resources," that he would expect to achieve if, instead of the accepted course of action, he adopted that course which would yield the second highest *value*.

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Even though a resource deposit may be extracted at a very low financial outlay, the profit-seeking actions of landowners may result in the deposit never being extracted. Extraction of the resource may be permanently foreclosed by agricultural, recreational, industrial or residential uses of the land that may promise higher profits to the owner. Hence, an external observer's estimate of the present value of scarcity rents and profit associated with extraction cannot be taken as the presumptive indicator of the land's most highly appraised use.

Actions may also be prompted by subjective non-monetary goals that may foreclose the extraction of the resource. Extraction may involve permanently foreclosed alternative use, the value of which may not be fully reflected in market prices; these may include environmental values or aesthetic amenities that may be sacrificed in the eyes of some by a decision to exploit the exhaustible resource.[30] For example, a resource deposit that appears to be a candidate for a strip mine may also be an ideal site for a wilderness area, sanctuary for endangered species, natural wildlife habitat, or park with beautiful vistas. The loss of such environmental amenities represents a valuable use of the land that may be foreclosed were extraction undertaken. A prospective buyer of such resource-bearing land may be motivated simply by a desire to avoid what he considers as the external cost associated with foregone environmental amenities. In other words, his principal goal is simply to assure that extraction never occurs. Since the opportunity cost is the most highly appraised relinquished use, extraction of the resource may be the foregone use of the land. In the latter case, the opportunity cost would include a subjective reckoning of the combined present value of scarcity rent and entrepreneurial profits. One notes that the scope of possible motivations in acting makes any 'socially-optimal' economic ranking of exhaustible-resource deposits meaningless and empty.

"Optimal" Conservation: An Expanded Misesian Perspective

In applying the concept of the Hotelling Principle to petroleum resources, University of Texas Professor Stephen McDonald has described optimal conservation as "action designed to achieve or maintain, *from the point of view of society as a whole,* the maximum present value of natural resources (or a natural resource)" (McDonald 1971, p. 71). Most of the economics profession would readily accept McDonald's definition without qualification or modification. But one of the implications of the preceding discussion is that such a definition of "optimal conservation" must be interpreted in a way different from the way it is intended. Society as a whole has no operational or quantifiable *point-of-view* or perspective that would be

[30]Mises (1998, p. 234) has said that:

> acting man is always concerned *both* with what he refers to as material and "ideal" things. He chooses between various alternatives, no matter whether they are to be classified as material or ideal . . . every concrete action aims at the realization of both material and ideal ends or is the outcome of a choice between something material or something ideal.

In the traditional presentations of the Hotelling Principle, no allowance is made for actions prompted by anything other than economic motivations.

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useful in assessing the extent to which conservation is achieved. McDonald makes reference to *action*, but still seems to cast his definition in terms of a quantifiable, "maximized" state—not a process by which individual actors pursue and attain their chosen ends. A presumed objective content is largely taken for granted by mainstream economists even though no *observable or measurable* content is to be found in the *ex ante* appraisals prompting the actor to extract, delay extraction or employ the land in a competing use. No operational basis exists with which to determine that a particular allocation of the land is optimal independently of the actions of individuals who own or seek to own the land. No empirically-based standard of optimal conservation can emerge from the Hotelling Principle separate from the market results achieved by acting human beings pursuing their own ends.

An appropriately emended definition of conservation would be "action designed to achieve or maintain, *from the point of view of the land owner,* the maximum present value of the lands bearing the resource." The purpose of such action exists only in the mind of the actor who owns and controls the resource-bearing land. The actor will seek maximum present value if he is motivated by future monetary gain; but this anticipated maximum is only a personal, private calculation based on a tentative subjective understanding of the future state of the market. It has no operational content that would accommodate an empirical testing of "performance" with respect to conservation—however the latter term may be defined. This maximum present value may or may not be based on a plan to extract the resource. In some cases, actors may seek to own and control the land for reasons other than future monetary reward. Such actors may be driven by humanitarian or naturalist aspirations in choosing alternative uses of the land. Whatever value is appraised in committing lands to particular uses, it is not a dollar value that can be measured or estimated in an *ex ante* sense by anyone but the landowner or the party with the legal right to control the use of the land.[31] It is a value attained only as individual actors achieve their subjectively defined goals; it is realizable only as the land is committed to its intended use; but at any one moment in time, this intended use can only be known to its owner or prospective owners.

PRESCRIPTIVE POLICY AND THE HOTELLING PRINCIPLE: A SOURCE OF CHAOS

This section focuses on the ways in which particular regulatory uses of the Hotelling Principle are absolutely vitiated by the reality of human action. As noted in the preceding discussion, objective, measurable content is contingent on the existence of equilibrium conditions that *cannot* emerge in the real world of human action. If such equilibrium conditions are not attained, the *appraisements* of actors are totally subjective and not observable or even definable by the external observer. Hence, in an honest examination of the content and use of the Hotelling

[31]The party having the legal right to control the use of the land may be a lessee instead of the full fee owner.

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Principle, economists are confronted with a troublesome implication: the Hotelling Principle, in fact, provides the economist with no operational framework within which to predict, monitor, or even regulate the extraction of exhaustible resources.

Absence of an "Operational" Foundation to Regulate Actions

Most economists do not properly address the implications of human action in examining the phenomenon of scarcity rent or user cost. For example, Anthony Scott, in commenting on the measurement of user cost, has observed that "[It] has been suggested that the present user cost function is a subjective concept, depending on individual expectation of prices, sales, costs, and production functions. Its statistical measurement, therefore, is unlikely to produce convincing results." Scott manages to dismiss this idea by noting the incentives that exist to measure user cost and then in the next paragraph states that "the economist . . . applying user cost to . . . aggregate situations may find it an instrument well adapted to balancing actual and alternative net advantages" (Scott 1953, pp. 383–84). Clearly Scott is fundamentally correct in his first statement but essentially wrong in the latter-quoted observation, unless the economist is making an assessment of user cost for himself as the owner and operator of the mine. One is puzzled by Scott's acknowledgment that user cost may be subjective at the level of the individual actor's choices yet have sufficient objective content in "aggregate situations" to allow economists to estimate "actual and alternative net advantages" of alternative extractive agendas.

In order for the Hotelling Principle to fulfill the role envisioned by Scott, a regulating authority must be in a position to prescribe optimal rates of extraction or the timing of exploration. The appraisements that prompt particular actions must be objective and observable. From the preceding discussion, it is clear that the actor's appraisements are subjective in an *ex ante* sense. *Even from an* ex post *perspective, the actual appraisements prompting action do not and cannot exist as objective data.* Efforts at retrospective reconstructions of an extractive enterprise's choice-making process do not address the fact that the *ex ante* appraisements cannot be given objective expression even after the fact. One additional logical and irrefutable implication of the subjective nature of the actor's appraisements is that the *optimal timing of exploration, extraction, or the commencement of extraction cannot be meaningfully prescribed for the actor or imposed on the actor through any regulatory mandate. Such regulatory mandates simply cannot have legitimate operational or scientific meaning.*[32]

Government Ranking and Management of Its Own Resources

The Hotelling Principle implicitly carries with it the idea that exhaustible resource deposits are capable of being ranked in an economic sense. If a governmental

[32]Oddly enough, these types of regulatory sanctions form the working basis for leasing arrangements designed to facilitate the extraction of exhaustible resources. (For a criticism of leasing as a form of property tenure, see Rothbard 1970, p. 50.)

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ranking of governmentally-owned, resource-bearing lands is to have operational meaning, it must be based on some objective economic criterion. In an equilibrium world, free of acting human beings in which resource-bearing lands have no uses alternative to extraction, those deposits yielding the greatest scarcity rent are exploited first in an "optimal ranking." But in a world of acting human beings, governments cannot establish an optimal ranking independently of the actions of individuals pursuing their own ends. The importance of this issue arises from the fact that governments around the world own or control a significant portion of lands bearing exhaustible resources. In the United States, the Federal government owns and controls about one-third of the land mass (including offshore lands). The government usually issues leases for these lands after having gone through some attempt at ranking so that the best deposits are leased and exploited first. However, these leases are usually issued under the strict proviso that exploration be commenced by a certain date and that uses of the land other than extraction of the resource are strictly foreclosed. Under these strictures, the ranking process becomes a meaningless exercise supported only by decree of law or regulation.

Governments have no means of establishing any rational economic ranking of their own resource-bearing lands separately from or independently of the rankings established by individuals in the market. Total privatization is obviously a 'first best' solution to this quandary. A second best answer is provided by competitive leasing of publicly owned lands. However, if the government presumes to control the timing of activities on the leased lands and alternative uses of the lands, the issue remains unresolved. Functional property rights would still be absent. Economic calculation requires that property rights make sufficient allowance for uncertainty and alternative motivations on the part of lessees or prospective property owners. A rational economic ranking emerges only through actions of individual lessees. However, this ranking process can only occur as lessees are able to take advantage of total latitude in their timing of activities and in using lands in accordance with their subjectively defined goals and view of the future.

Is such a rational result possible if the private use of these lands involves social cost or external cost? As Mises has noted, the phenomenon of external costs arises from the fact that:

> The laws concerning liability and indemnification for damages caused were and still are in some respects deficient . . . some people choose certain [actions] merely on account of the fact that a part of the costs incurred are debited not to them but to other people . . . where a considerable part of the costs incurred are external costs from the point of view of the acting individual or actors, the economic calculation established by them is manifestly defective. (Mises 1998, p. 651)

However, even with more appropriately defined property rights, costs, whether external or internal, are essentially subjective and thus not measurable by any external observer including the government. Nevertheless, the Coase Theorem lends credence to the view that in those instances in which external costs are present, leases with appropriately-broad property rights generally provide a solution superior

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to any governmentally-imposed decree.[33] As the discussion here has suggested, economic ranking emerging from market transactions is possible even in the presence of external costs. A governmental social ranking of resource-bearing lands employing the Hotelling Principle or the Coase Theorem is meaningless in light of the fact that prospective holders of property rights have heterogeneous motivations and different judgments regarding market uncertainty. The market may rank some low-cost resource deposits last because lessees or prospective future owners of public lands choose competing alternative uses for the land. Even with the presence of social costs, such a market ranking of resource-bearing lands could not be considered sub-optimal.

The Policy Analyst's Estimated Supply Schedule for the Resource

During the so called energy crisis of the 1970s and 1980s, various government agencies were engaged in the task of estimating aggregate supply schedules for fossil fuels. Some of this activity continues to this very day within the U.S. Department of Energy. The rationale for these efforts centers on the presumed urgency of having some 'central planning' in the allocation of energy resources and the possible need to implement subsidy programs to induce 'desired' levels of domestic production of these fuels. The information on aggregate supply schedules was thought to be important in estimating the subsidies necessary to achieve the desired levels of fossil-fuel production.

An estimated supply schedule must have not only a price-quantity dimension but also a time dimension. To be used for the purposes described above, the supply schedule must not only estimate the supply responsiveness to a subsidized price but also the time horizon over which supply is forthcoming. The entire preceding discussion presented highlights the absurdity of such an exercise. The elements entering into the capital appraisements of resource-bearing properties are subjective since each is a product of conjecture, judgment and speculation regarding the future. Since the individual actor cannot fully know the future, neither can he know before the fact when he will act nor what alternative choices will be made at some time in the future. Hence, no empirical basis can exist for the estimation of any future supply schedule. Nonetheless, there is every reason to

[33] A property-rights solution to social costs would be an example of the Coase Theorem in action (Coase 1960, pp. 1–44). But like the Hotelling Principle, the Coase Theorem is also not operational; in a given instance, the actions that may reflect Coasian behavior are not prompted by valuations or appraisements with any objective content. The gist of the Coase Theorem is that "it makes no difference how property rights are allocated in cases of conflicting interests, provided that some property is assigned to someone and then defended." The assignment of property rights determines who pays [bribes] whom. From this assignment of property rights a "social efficiency" is supposed to emerge in which external costs are "internalized." In situations involving external costs, the Coase Theorem is also thought by its adherents to be a tool of jurisprudence in which judges are able to arrive at a socially efficient assignment of property rights. Efficiency is defined as the *imposed* legal solution that minimizes "costs." However, in light of the fact that costs are always subjective, such an application of the Coase Theorem is clearly not operational. A considerable literature criticizes the Coase Theorem (Block 1977, pp. 111–15; Rothbard 1985, pp. 55–99; Rizzo 1979, pp. 71–89; Rothbard 1979, pp. 90–95, and Littlechild 1978, pp. 77–93).

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believe that the Federal government will continue to pursue such supply-estimation efforts for fossil fuels.

AN AUSTRIAN CRITIQUE OF ATTEMPTS TO TEST THE HOTELLING PRINCIPLE

Economists view some version of the Hotelling Principle as an empirically testable or "operational" construct even though extractive resource markets are characterized by constant economic change. Proper testing of the Principle is seen as being a matter of collecting the "correct data" and skillfully applying quantitative techniques. The Hotelling Principle has been the focus of considerable empirical research. No attempt is made here to critique this entire body of literature. The foregoing analysis provides sufficient general criticism of these attempts. However, some of these endeavors have drawn more attention than others.

Needless to say, all attempts to empirically test the Hotelling Principle are unmindful of the subjectivist implications of human action. Attempts to test the Hotelling Principle inadvertently reveal the extent to which the traditional "empiricist approach" is misguided. A 1985 paper purported to test the extent to which the Hotelling Principle is actually reflected in the actions undertaken by extractive enterprises (Farrow 1985, pp. 452–87). The analysis employed a strictly objectivist perspective with respect to the variables of the Hotelling Principle including extraction cost. A major portion of the paper was devoted to an econometric estimation of a "cost function" for extractive firms. The hypothesis that the Hotelling Principle describes the behavior of extractive firms was finally rejected. The dubious nature of this empirical examination was brought into sharp focus by the fact that in testing three variations of the model, the econometric analysis revealed that the firms were employing *negative discount rates*. But in lamenting the results, the author was not led to question the measurability of cost and other variables:

> In a broader context, rational resource policy debates are impossible if available models are not consistent with the actual behavior of firms. If an accurate description of behavior is unavailable, there is no basis on which to argue that firms extract too much, too little or just the correct amount. Therefore, further research is indicated to construct models . . . that do describe the actual behavior of firms that extract natural resources. (Farrow 1985, pp. 480)

The correct interpretation of the analyst's results is that econometrically measured cost functions fail to reflect the locus of subjective opportunity costs associated with extraction. As Mises has noted:

> Attempts to establish cost accounts on an "impartial" basis are doomed to failure. Calculating costs is a mental tool of action, the purposive design to make the best of the available means for an improvement of future conditions. It is necessarily volitional and not factual. In the hands of an indifferent umpire, it changes its character entirely. (Mises 1998, pp. 346–47)

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Efforts have also been made to examine and test what has been labeled the "Hotelling Valuation Principle" (HVP) (Miller and Upton 1985, pp. 1–25; Watkins 1992, pp. 1–24; and Adelman 1993). The HVP is a restatement of the Hotelling Principle; it is based on the assumption that extraction rates are already "optimally adjusted in an inter-temporal sense." In other words, some sort of neoclassical equilibrium is assumed to have been attained. If the HVP is satisfied, *the present value of marginal scarcity rent should be constant in all future time periods in the production horizon.* If the latter assumption were literally satisfied, the *accounting reconstruction of net price* per unit (price net of marginal extraction cost) recovered from current production should be approximately equal to the per-unit market price at which the *in situ* or unextracted resource is traded. The latter presumed equality forms the basis of the hypothesis tested.[34] The hypothesis would be accepted if the former accounting reconstruction of current net price were approximately equivalent to the per unit *in situ* market price of the resource.

Much of the research employing this testing procedure suggests that the HVP is not reflected in the current market price of *in situ* reserves. In fact, the market price of unrecovered reserves appears to be about half the marginal net price estimated with the use of the HVP. Various reasons have been offered to explain this discrepancy. The explanations include the view that the applicability of the HVP to oil and gas production is diminished by the institutional milieu as reflected, for example, in contractual arrangements (Watkins 1992). A variation on this idea is that production regulations prevent firms from choosing rates of extraction that would be consistent with the HVP (McDonald 1994, pp. 1–17). Another explanation of the discrepancy centers on the misleading assumption that firms view the stock of recoverable reserves as fixed. Exploratory activity and technological change allow actors to view oil reserves as being renewable rather than as a resource with fixed and known quantity (Adelman 1993, 1995).

The above explanations of these test results have some merit; no effort is made here to rebut or critique these interpretations. However, one should note that accounting reconstructions of the net price (net of current, per-unit production cost) must be an accurate reflection of the marginal net value of current incremental extraction *as perceived by the actor.* As outlined above, such an assumption rests squarely on the likelihood that actors are making choices in an equilibrium environment in the virtual absence of human action. Of course, human action means that no neoclassical equilibrium is possible. In the absence of neoclassical equilibrium, the marginal net value of current extraction will be subjective, in part, because marginal cost is subjective. Additionally, as Ludwig von Mises (1998, p. 327) has noted, "All prices we know are past prices. They are facts of economic history. In speaking of present prices, we imply that prices of the

[34]One expedient employed by Miller–Upton and also by Watkins is the assumption of constant returns in current and future extraction. With this assumption, average cost can be substituted for marginal cost in the estimation of current marginal net price. Obviously there is no evidence to warrant such an assumption.

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immediate future will not differ from those of the immediate past." In other words, an element of subjective conjecture is also involved in the notion of what may be considered current price. Hence, in a world of human action, the marginal net value of current extraction itself becomes essentially subjective. One is forced to conclude that these estimation procedures cannot be viewed as valid tests of the Hotelling Principle. One can properly conclude that research agendas based on empirical testing of the Hotelling Principle are flatly nullified by the reality of human action.

CONCLUSIONS

The Hotelling Principle defines socially-optimal conservation of an exhaustible resource in a mathematically-defined, equilibrium environment in which no human action can occur. Nevertheless, the economics profession generally tends to view the Hotelling Principle as offering the promise of being operational and to have potentially sufficient empirical content to serve as the basis of prescriptive policies for the socially-optimal conservation of an exhaustible resource. We have examined the Hotelling Principle from the Misesian perspective of praxeology and the axioms of human action and find the following conclusions:

1. As a mathematically derived economic theory, the Hotelling Principle relies on the assumptions of perfect foresight and neoclassical equilibrium which are both inconsistent with a world in which conscious human beings act to achieve their own subjectively-defined, future goals.

2. Human beings act and are motivated to act by uncertainty, unexploited profit opportunities, and non-monetary (i.e., non-material) objectives; these motivations define the nature of the disequilibrium world in which actions are undertaken.

3. Under conditions of true market uncertainty (case probability), the elements of the Hotelling Principle such as prices, costs, and rates of discount are all subjectively established in the understanding of the existing extractive enterprise.

4. In this disequilibrium, actions bearing on the extraction of the resource are motivated by the goal of attaining the largest possible surplus inclusive of scarcity rent and entrepreneurial profit.

5. The surplus does not exist as an objectively discernible magnitude in an *ex ante* sense and hence extraction decisions can only be defined as *privately* optimal; social optimality of extraction decisions cannot exist in any operational sense.

6. Prior to the commencement of resource extraction, unexploited profit opportunities or unfulfilled non-monetary goals may prompt owners to divert the resource-bearing land into preferred uses that deliberately foreclose extraction.

7. The subjectively-reckoned opportunity cost associated with another preferred use for the land may include a profit-rent surplus associated with extraction; rankings of alternative uses are strictly in the mind of the actor; no socially-optimal use of the resource-bearing land can exist independently of the goal-seeking actions of individual owners.

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8. No means exist with which to test whether actions are consistent with the Hotelling Principle; hence, it provides no operational foundation for regulating private action nor does it provide an empirically-based tool for the ranking and management of publicly owned, resource-bearing lands.

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THE EQUATIONS OF MATHEMATICAL ECONOMICS AND THE PROBLEM OF ECONOMIC CALCULATION IN A SOCIALIST STATE

LUDWIG VON MISES

I

It has been contended that it would be possible for a socialist economy to solve the problem of economic calculation by applying the equations by the aid of which mathematical economics describes the conditions of economic equilibrium. This view made its first appearance in an article by Barone published in 1908[1]; since then it has been advanced time and again and enjoys marked popularity at the present time.

Hayek has shown the practical difficulties which stand in the way of this attempt at solving the problem. The calculation would have to include all conceivable uses, and ways of combining all available goods. Moreover it is not sufficient here to bring together under a common denominator all the quantities of goods which appear to form a single class from a technological standpoint. Since the economic profitability of transporting goods from place to place must be reflected in the equations, and since the latter must also solve all problems of location, goods which are similar from a technological point of view, but which are not available for use at the same place must appear in the calculation as independent items. If Hayek (1935, pp. 207–14) estimates the order of magnitude of the number of necessary equations and calculations as hundreds of thousands, this is

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EDITOR'S NOTE: Ludwig von Mises published a French language version of this paper, translated from German by Gaston Leduc, in *Revue d'économie politique* in 1938 (97, no. 6:899–906). Mises himself wrote this English language version which was previously unpublished. In this article, he discusses the different elements of the case against using mathematical equations to solve the problem of economic calculation in socialism that were advanced by himself and F.A. Hayek. The editor would like to thank Grove City College for access to this manuscript and permission to publish it.

[1] An English translation is found in Hayek (1935).

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certainly far below the number which we are justified in assuming on the basis of this factor.[2]

It is at once clear that the collection of these data, and the setting up of the corresponding equations, is a task far beyond the powers of a socialist central administration composed of mere human beings. The practical impossibility of carrying out the proposals connected with this or any similar solution is certainly not disputed. In consequence, we might, if we were concerned solely with the problem of economic calculation in the socialist state and with the practicability of socialism, leave the matter here. The proposals are however of special interest from the point of view of economic theory. Their closer consideration leads to important propositions concerning the character of the equations of mathematical economics.

II

The only way we can analyze exchange transactions is by assuming that they are directed toward producing a state of affairs in which no further exchange takes place, either because a state of complete satisfaction has been reached, or because a situation has been reached which, though not completely satisfactory, could not in the given conditions be made more satisfactory by further transactions. In its use of the static equilibrium concept, economic analysis does not go so far as to construct a state of complete standstill in which no more trading takes place. It confines itself to the construction of a situation in which the process of exchange follows a uniform course. In the future the same transactions are supposed to be continually repeated, because the conditions which give rise to exchange, and the conditions under which it has to be effected, remain unchanged. In this equilibrium situation there is no inducement for the economic subjects to change the allocation of means of production, because there is no conceivable and possible way of using them which appears better suited to satisfy their wants.

The equations which describe the economic equilibrium give expression to this method of approach in mathematical language. They say no more and no less. They say: If an equilibrium situation is to be reached, it can only be a position such that it will no longer be possible to improve the satisfaction of wants: by making changes.

It is particularly characteristic of these equations in economics that they are necessarily inapplicable to all practical purposes and computations. The equations of mechanics may help us to foresee future events, because the physicist is able to find out approximately the empirically constant relationships between physical quantities. If we insert these constants in the equations we can work with them. We cannot with exactitude of course but nevertheless with sufficient accuracy for

[2]Pareto (1927, pp. 233–34) has shown that for 100 individuals and 700 goods the number of equations to be solved is 70,699.

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practical purposes solve given problems. With the equations of economics it is a different matter. For within the sphere of human trading activities we do not know any constant quantitative relationships. All quantities that we are able to ascertain have therefore no general significance but only an historical one (Mises 1933, pp. 113–15, 150ff).

Thus even if we know the present conditions, we are unable to say anything of a quantitative nature, on the basis of this knowledge, about the pattern of future values. This is the big mistake that has been made by all those who have wanted to substitute "quantitative" economics for "qualitative" economics. A quantitative treatment of economic problems can only be economic history: it can never be economic theory. And there is no economic history of the future.

The equations which describe the state of economic equilibrium include consumers' preferences. These are the preferences which will prevail at the moment when the equilibrium is established on the market. They are different from today's preferences as we know them from the way in which they are expressed on today's market. Today we know nothing about these future preferences and cannot predict what they will be. Thus, though we may know the present-day condition of the market and all the data determining the configuration of today's market position, including consumers' preferences as they are expressed in that market position, we still do not know the future preferences of consumers. We may be justified in assuming that they change. This assumption does not help however. For the economic system is not in equilibrium today, and we want to know the consumers' preferences for the point of time when it *will* be in equilibrium and when, in consequence, other conditions will prevail. The progressive approach of things towards an equilibrium situation which we have in mind, and which forms the subject of our inquiry, means the progressive transformation of the conditions determining the preferences and therefore also of the preferences themselves.

The problem is not only that, in order to make use of the equations, we need to know the scale of preferences that will prevail at a future point of time and which are not known to us today. Even today's preferences are only known to us in so far as they are reflected in the system of prices ruling on today's market. That is to say we know roughly how great is the demand for a certain article by the price prevailing for it on the market today. But we know nothing of what the demand would be if another price prevailed. We do not even know the shape of the supply and demand curves; we only know the position of one point at which the two curves cut or, more precisely, have cut today. Experience tells us so much and no more. It can provide us with no information about the data which we require for solving our equations.

Finally there is still a third point which needs mention: The state of equilibrium which our equations describe is a purely imaginary state of equilibrium. It is merely a hypothetical, though indispensable, tool of analysis which has no counterpart in reality. Thus it is not only a future state which differs from the state of the

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moment that has just passed and with which we are acquainted: It is merely an imaginary theoretical construction which will never become reality.

Hayek (1935, p. 211) has also pointed out that the possibility of using the equations describing the state of equilibrium for purposes of economic calculation presupposes a knowledge of the future scales of preferences of consumers. But here he has in mind only a complication of the practical task of applying the equations, and not a fundamental and insuperable obstacle to their use for any such process of calculation.

It makes no difference whether we conceive of the socialist state as a dictatorship of the central administration in which only the valuations of the dictator carry weight, or whether we conceive of it as a state which tries to imitate a democratic system in which the preferences of individual consumers of groups of consumers are supposed to determine the direction of economic activity. Even the dictator cannot know today what his relative preferences will be at a later date under changed circumstances: he is no more capable of knowing this than is an individual consumer.

III

The equations describe the hypothetical equilibrium position which the economic system would ultimately and finally reach if all causes liable to give rise to changes in preferences were to disappear from that system.

Economic calculation, which is essential to the economic system, does not, however, require that we should know this hypothetical situation which can certainly never be reached in the actual economic system. What is necessary for the direction of the economy is only the knowledge of the next step which is required to be taken in the economic system. It is necessary to find out which of all the conceivable changes can, in the given conditions, secure the fullest satisfaction of wants from the standpoint of the preferences of the consumers or of the dictator. For this purpose the equations which describe the final equilibrium position are quite inappropriate. They say absolutely nothing about the path which the economic system has to follow in order finally to reach the equilibrium. Some recognition of this fact is distinguishable in the criticism which is constantly brought against these equations that they are only "static" and not "dynamic."

IV

Socialists who are not amenable to reason have the habit of parrying the argumentation which sets forth the impossibility of economic calculation in the socialist state by pointing to an alleged deficiency in the economic calculation, in money terms, of the capitalist society. They will therefore not hesitate to bring the following objection against the foregoing exposition: All that the entrepreneurs in the capitalist exchange economy know are the relative valuations and prices of today. This does not however prevent them from taking their calculations and

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producing on the basis of these calculations. Why should it be any different for the economic dictator of the socialist state?

This kind of question merely reveals an entire lack of understanding of the problem under discussion.

The future is always uncertain for human beings. Consequently every transaction which is carried out for a future date is speculation. In this respect there is no difference between socialism and capitalism.

It will always be happening that new facts appear, which people have not foreseen, and which cause them to say after the event that they would have acted differently if they had known beforehand what was going to ensue. People cannot take account in their economic activities of things that are unknown to them. We cannot therefore blame the method of economic calculation of the capitalist system, operating on the basis of the money prices of the market, for the fact that the expectations of the economic subjects are occasionally disappointed subsequently by the occurrence of unforeseen events. In economic calculation regard is taken of the future configuration of conditions of supply and demand only insofar as people foresee them, or think they can foresee them, in the present. It is merely the expectations of the entrepreneur about the future which influence the market situation of today and contribute towards the formation of today's prices: this applies particularly to the prices of means of production and of consumption goods which do not perish rapidly.

If we proceed to argue that, for the solution of his equations, the general manager of the socialist economic system would have to have data which are not and cannot be known to him, this does not mean to say that he will know less about the future and about future needs than does the entrepreneur in the capitalist economic system. The analysis of this problem belongs to another chapter of the treatment of the problems of the socialist economy, and has nothing to do with the question of economic calculation. We may assume for purposes of the argument that the dictator of the socialist economy knows just as much, or just as little, about the future as the capitalist entrepreneur. In any case even this dictator will desire a variety of things, and he will have to discover in which way the objects he aims at can be most effectively reached. Here "most effectively" means, of course, merely: as effectively as is possible from the standpoint of present-day knowledge. In making considerations of this kind the capitalist economy uses calculations in terms of money: it calculates on the basis of market prices, which also take account of the future insofar as it can be taken account of in the present. Now in order to solve his equations, the dictator would have to know the relative valuations which will correspond to the future equilibrium situation, i.e., to a situation which is different from the situation in the present and which can never be reached in the real world.

The monetary form of calculation operates by way of market prices in which the future also is reflected as it appears today to the parties on the market. The

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socialist director-general, however, needs, if he is to solve the equations, the knowledge of a hypothetical situation which is different from the reality with which he is acquainted and is a construction of our thinking which we know, without any doubt, will never become reality. It is no help to him in setting up his equations to know the conditions that are given today and the opinions that prevail today about the shape of things in the future. He would need to know how things would look if a hypothetical state were reached in which all data had become rigid, and no further change would be set in motion, because no change could afford any further increase in welfare.

Our conclusions are thus as follows: In the capitalistic economy it is possible to make calculations on the basis of our present-day knowledge. It may be that mistakes will occasionally be made because unexpected events interfere with our plans and expectations. In the socialist state however it would not even be possible to calculate on the basis of our present knowledge. Those who think that it would be possible to apply the equations of mathematical economics for making the calculations fail to see that included among the items of which these equations are composed are unknown preference scales belonging to a situation which is unreal and can never be realized in practice. The circumstance that they are unknown frustrates all attempts to use the equations for purposes of economic calculation.

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THE AUSTRIAN MARKET SHARE IN THE MARKETPLACE FOR IDEAS, 1871–2025

RICHARD VEDDER AND LOWELL GALLAWAY

Over the generations, the popularity of the Austrian School's approach to economics has risen, fallen, and risen again. Figure 1 represents a speculative guess at the "market share" of Austrian ideas among academic economists, where "Austrian" is broadly defined as individuals who believe in, or are at least highly sympathetic to, most of the core doctrine emanating from the Austrian School founded by Carl Menger. Even in its resurrected state, only a very small proportion of economists today consider themselves Austrian, and the economics profession is probably far less Austrian in its outlook than a century ago.

Presumably the rise in the last generation of Austrian economics' market share in the academic milieu reflects mainly the empirical fact that Austrian concepts have proven useful and relevant in explaining contemporary human economic action. Part of the change in popularity of any school of thought, however, also relates to the way ideas are marketed. The mode of dissemination may be important in determining the extent to which the rise in Austrian market share observed over the past generation continues in the next one. Part of the issue, of course, relates to how and what Austrians say—what McCloskey (1985) calls the "rhetoric" of economics. But much also relates to *where* Austrians speak. Should Austrians, against long odds, try to penetrate the mainstream forums for disseminating ideas, especially the leading economic journals? Or, should they continue to build an intellectual infrastructure that reaches a small but growing audience of sympathetic academics and parts of the broader public through think tanks like the Mises Institute and journals like the *Quarterly Journal of Austrian Economics* and the *Review of Austrian Economics*?

This article argues that there are advantages to both approaches, and that under some circumstances, the overall dissemination of Austrian economics is maximized by attempting to publish in mainstream outlets, whereas in other cases,

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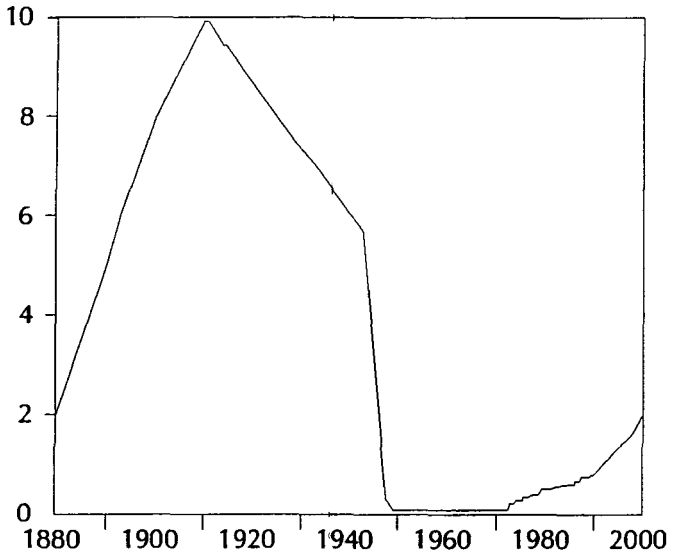

Figure 1
Percent of Economists Who Are "Austrian": 1871–2000

the Austrian School's influence is likely to be enhanced by utilizing the newer outlets for publications created by the Austrians themselves. As in the private market economy, the Austrian scholar has to assess probabilities and consider trade-offs in deciding on how to proceed. Also as in the market economy, the academic entrepreneurial judgments made sometimes will be inaccurate, but they must be made nonetheless.

We would recognize, of course, that defining what is "Austrian" is not without difficulty, since there are differences within the school itself as to what constitutes the corpus of Austrian economics. If one were to ask, say, Peter Boettke or Karen Vaughn at George Mason University to distill the essence of Austrian economics into 250 words, their description might differ in important ways from that of, say, Joseph Salerno of Pace University or Roger Garrison of Auburn University.

Indeed, while the label "Austrian" is a useful generalization to describe a group of scholars with a similar perspective, each individual scholar has his own unique positions on issues; there are few persons with absolutely identical views regarding all economic phenomena. Some economists, ourselves included, are classical liberals in our outlook, appreciating insights from the Chicago School, the Public Choice School, some New Institutional Economics, and other free-market perspectives that often complement rather than rival Austrian ideas. Like Leland Yeager (1997), we think one can be "fellow travelers" of both the Austrian and Chicago schools simultaneously. Does that make us less Austrian? We suspect that there is probably no universal agreement as to the answer to that question.

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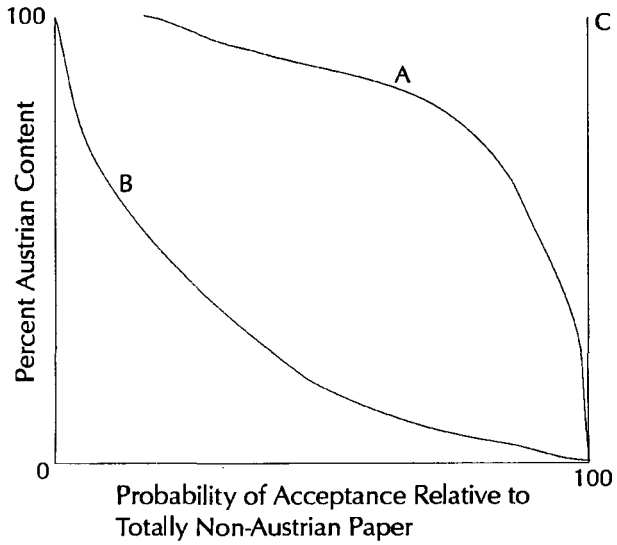
THE PROBABILITY OF JOURNAL ACCEPTANCE TRADE-OFF FACING AUSTRIANS

Putting these issues of taxonomy aside, most journal editors and referees are neither Austrian, however defined, nor overly sympathetic to Austrian ideas. They do not like the non-quantitative methodology used by most Austrian scholars, and do not like Austrian criticism of neoclassical and other writers for whom they have great respect. They may also abhor the laissez-faire policy prescriptions that seem to follow either implicitly or explicitly from Austrian ideas. Thus, an Austrian economist seeking to publish in a major mainline journal faces a dilemma: the more overtly Austrian the paper is, the greater the probability of rejection. By disguising somewhat a paper's Austrian nature, the author can enhance the probability of acceptance, but at the cost of diluting the Austrian message. Peter Boettke (1994, p. 604) put it well:

> Most of the articles by the younger generation of Austrians that have appeared in the top professional journals are *strategic* articles. These articles take the form of either "tenure articles" (that is, articles which do not even pretend to advance Austrian ideas but rather that pass the professional test needed to earn tenure) or "synthesis articles" (articles which find a sympathetic trend within the mainstream and then try to build a bridge to Austrian ideas—which are usually hidden in the footnotes).

Is it worth it? Is one compromising too much of the truth or one's principles for a small amount of academic respectability and a few shekels of silver (assuming that publication leads to salary increases and tenure)? We would argue that the answer to that question largely depends on the precise nature of the publication probability–Austrian content tradeoff. Consider Figure 2. If the Publication–Austrian

Figure 2
Publication Probabilities vs. Austrian Content



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curve looks like A, the author might well submit a paper to the journal with a 75 percent pure Austrian message (relative to the message he would send to an explicitly Austrian journal such as the *Quarterly Journal of Austrian Economics*), reducing the probability of acceptance by only 20 percent from what it would have been if the article were devoid of Austrian content.[1] Many writers would say that would be an acceptable tradeoff: the bulk of the Austrian message is disseminated, and the probability of publication has not been reduced drastically. The discrimination against Austrian economics is insufficiently large to justify abandoning approaching the mainline literature.

Suppose, however, the Publication–Austrian curve looks like B. In such a case, a paper like the one discussed above (with 75 percent "pure" Austrian content), would have a probability of acceptance equal to only five percent of the probability that it would have had if the article were totally non-Austrian. The discrimination against Austrian economics is so pronounced that it is probably better to ignore the mainline journal in question and send the paper to an overtly Austrian outlet. It is presumably the widespread existence of curves like "B" that has spawned the existence of this journal and other outlets for Austrian ideas. In a world of no discrimination for or against Austrian ideas, the curve would be totally inelastic, like C in Figure 2, with no trade-off between the Austrian nature of content and the probability of acceptance. Arguably in such a world, there would be little need for journals devoted exclusively to Austrian topics.

The curves in Figure 2 might be viewed as a mainstream journal editor's demand curve for Austrian economics. In today's academic milieu that is still fairly hostile to Austrian ideas, publishing too many Austrian ideas may lower the profession's view of the editor or his journal. If the Austrian content of any given article is great, to the mainstream editor that is a high "price" to pay for that article, so the quantity demanded is low. Low Austrian content implies a low "price" to pay from the editor's perspective, increasing quantity demanded. The total amount of Austrian economics published in the journal ("price" times quantity) is maximized when the elasticity of demand is equal to one. As good Austrians know, however, no one knows with precision the shape of the curve in Figure 2, and whether individual scholars maximize the dissemination of Austrian ideas or their own utility is partially dependent on how accurately they assess the knowledge available to them.

Of course, every journal has its own "demand curve," depending on the degree of discrimination present against Austrian economics. One might surmise that journals with editors with something of a classical liberal, but non-Austrian, perspective might be somewhat more sympathetic to Austrian ideas and have a

[1]Of course, papers may be rejected for reasons unrelated to their Austrian content, and many top-line mainstream journals have low acceptance rates. To control for this, consider the probability variable in question as the percent of the probability of acceptance that would exist if the paper were "mainstream" in nature with zero Austrian content. Thus, an 80 percent probability means that an Austrian paper has an 80 percent as good of a chance of acceptance as a purely non-Austrian one.

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demand curve similar to A or arguably even C (no discrimination against Austrian ideas). Examples from personal experience might include Gordon Tullock during his years editing *Public Choice,* or James Bennett during his continuing reign at the *Journal of Labor Research*. In part, this is because of their sympathy for the power of markets, but partly it is because these editors were or are not afraid to make editorial judgments without going through an onerous refereeing process. One would expect that Keynesian editors are more likely to have a demand curve similar to B, although again they are in part swayed by referee reports which reflect the opinions of individuals with varying degrees of discriminatory feelings against Austrian economics.

Actually, the demand curve in Figure 2 for any given journal will vary with the composition of the individuals reviewing the piece. If, by chance, the editor picks two referees reasonably sympathetic to Austrian ideas, the curve may look like A, while if he chooses two Keynesians, it would look like B. Since for many journals it is difficult to speculate as to who is going to do the refereeing, the possibility of author error in assessing the precise nature of the curve from Figure 2 is very high indeed. The knowledge problem here is even greater than in market situations where price signals help provide entrepreneurs information that moves them towards their optimal decision.

Principles and Pragmatism

It might be objected that *any* abandonment of the Austrian message is a sellout, a desertion of the pursuit of truth and of academic principles. Certainly the life of Ludwig von Mises, Murray Rothbard, and some other Austrians is a life of courage, of the dissemination of an undiluted message of pure Austrian belief at great personal cost. At the same time, other Austrians, such as F.A. Hayek and Israel Kirzner, have disseminated Austrian views to fairly wide scholarly audiences, in part perhaps because they have been more accommodating of non-Austrian beliefs. Indeed, most Austrians acknowledge that a significant part of the Austrian revival arose because of Hayek's winning of the Nobel Prize in Economic Science. Hayek, either because of his principled beliefs or for pragmatic reasons related to his career advancement, used rhetoric and content somewhat more congenial to those in the mainstream who confer the prizes and the top professorships. While that strategy enhanced Hayek's income and prestige, it also on balance furthered interest in Austrian ideas.

Virtually all journal articles these days are "censored" by the editor. The message is shortened to meet space constraints, the author is forced to introduce new references to papers liked by the editor or referee, or is required to perform added statistical testing, and so on. Routinely, authors make accommodations to meet either legitimate criticisms or the idiosyncrasies of the editors. Even the most principled scholar must accept this as a condition of getting published.

The double-blind refereeing process typically leads to decisions by committee (the editor and a couple of referees), which the public-choice median voter model

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suggests favors acceptance of papers that "don't rock the boat" and are in the ideological middle. Consider a paper with a high (say 80 percent "pure") Austrian content, which one reader likes. The other two readers are anti-Austrian, one more so than the other. The second reader wants to reject any paper with *any* Austrian content, while the third reader is willing to include a little Austrian content (say 10 percent), accomplished by a "revise and resubmit" request that requires excising most Austrian theory or methodology. In the majority rule situation, the "middle" reader (or "voter") determines the outcome, in this case 10-percent Austrian content. The pro-Austrian reader will probably go along with accepting the paper if even a little of the Austrians ideas survive, and will support the least fanatic anti-Austrian.

Things may be even worse than what the median voter model suggests, however, since journal acceptance is not on a strictly majority rule basis. Many editors will reject a paper that is liked by one referee but hated by another, independent of their own feelings. Most editors do not want to anger their referees. Thus referees often have implicit veto powers. This, on balance, hurts Austrian economists who seldom are in the middle on any economic issue and thus are likely to offend at least one referee. The probability of getting two referees sympathetic to Austrian ideas or at least fair-minded is small in a conventional journal. While the refereeing system thus has its very strong defects and often prevents original work from seeing the light of day, it is a reality of modern academic life.

Austrians have the same options as other scholars. If editorial mandates for revision completely emasculate the intended message, the author can take his business elsewhere. More often, however, at least part of the main message survives in some diluted form after revision, often with some added material that the author considers unnecessary or nonsensical. Suppose a person writes a paper drawing on the Mises–Hayek trade cycle theory, relating business cycles to the deviation of market interest rates from true time preference. Suppose the editor is intrigued by the main proposition in the paper, but demands some econometric evidence that the author finds methodologically questionable or nonsensical. Suppose further, however, that the testing, if performed, actually does seem to support the Austrian perspective, and leads the editor to accept it. While the Austrian writer does not like the revised paper as much as the original, it gets published in the preferred outlet with the main Austrian theoretical point intact. It seems to us that this sort of pragmatism on the part of authors is legitimate and works to further the dissemination of Austrian views in the United States. A far less acceptable editorial demand would be for the author to essentially eliminate the major Austrian theoretical point, keeping in the paper some tangential material which has little to do with the main Austrian message.

A Case Study: Getting *Out of Work* Published

Two decades ago, we began looking at historical data relating unemployment in the United States to the underlying wage, price, and productivity structure prevailing in

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labor markets, leading us to write a short paper, finished in 1980. We separately spoke to workshops at the Research Triangle and at the University of Chicago about the paper. In 1981, we submitted the paper to the *Journal of Economic History* (*JEH*), a journal in which we had published three times previously on issues not closely related to Austrian economics. Before the smoke cleared, we dealt with *five* editors (and even more referees) of the *JEH* attempting to get part of the message out that ultimately was included in our book *Out of Work*. The original paper went to *four* referees. After extremely intense revisions (that tripled the paper's length), editor Richard Sylla received two negative referee reports on the final version (although one said "the present piece has many elements of originality as well as technical skill"), and with "Solomonic editorial wisdom" concurred with the referees. This was more than two years after original submission of the paper.

Some prominent economists kept asking "when is that paper going to be published?" Yale Brozen of the University of Chicago was successfully using the paper in his macroeconomics class (Brozen 1983). Martin Bronfenbrenner of Duke (1980), who ultimately wrote a foreword for the book, noted that the paper would have been published quickly in a top journal in an earlier age but might not survive the "the legions of the fency-schmency" of current technocrats currently running journals. We utilized our connections as staff members at the Joint Economic Committee of Congress to get them to publish an early version of our work (Gallaway and Vedder 1982). At the suggestion of Fred Glahe of the University of Colorado, we finally sent a copy of the paper to Murray Rothbard. During a social occasion at an Institute for Humane Studies seminar in Palo Alto, California in the summer of 1983, we met Rothbard, who indicated interest in publishing the paper in his forthcoming journal, the *Review of Austrian Economics*. Rothbard (1983) confided in us that he did not like the double-blind refereeing system, but was being coerced into following it to demonstrate the presence of scholarly standards. If Rothbard had been a typical ultra-cautious editor, he likely would have rejected our paper after receiving referee reports, since one recommended rejection (unless very extensive revisions were made), while the second supported publication with moderately extensive revision. Most editors hesitate to side with one referee over another. Rothbard liked the paper, and told us unofficially that he was going to publish it, however giving us the option to take account of the referee concerns and revise as we wished. The paper was officially accepted in 1985 (Gallaway and Vedder 1987), appearing in the first issue of the *Review of Austrian Economics* more than six years after original submission to the *JEH*.[2]

[2]Professor Rothbard's strong hand in running the journal led Donald McCloskey (1988) to suggest that Rothbard was "joining in sociopathy that other Lenin of the profession, George Stigler," the longtime editor of the *Journal of Political Economy*. Whether or not he was a Leninist sociopath, we suspect that without Rothbard's encouragement and insistence that our paper be published, it would not have appeared, or only in diluted form.

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Both preceding and simultaneous with our submission to Professor Rothbard, we tried to also penetrate the mainstream journals, including the *American Economic Review*, with variants on the same theme, with very little success. Donald McCloskey, then an editor of the *Journal of Economic History*, liked a paper that we gave at the Cliometric Society meetings, which later became chapter six of *Out of Work*. He encouraged us strongly to submit it to his journal. Another distinguished economic historian, Barry Eichengren (1984), then at Harvard, also indicated to us that he liked that paper. A year or so later, Claudia Goldin (the then co-editor handling American-related manuscripts for the *JEH*) followed referee reports and rejected the piece. We made one final try with the *JEH* in 1991, a decade after our first attempt, seeking to publish our findings on black-white unemployment differentials, later incorporated into chapter 13 of *Out of Work*. Here the editors liked the data that we discovered (that showed black and white unemployment rates started to diverge sharply only after 1930), but deplored the classical liberal-Austrian interpretation we placed on the results, which of course was a majority of the paper. Weary, we capitulated to the editor and referees, managing to get one footnote in that hinted at our interpretation (Vedder and Gallaway 1992). In part, we opted for publication there in order to add a veneer of respectability to our forthcoming book.

The book (Vedder and Gallaway 1993) owed a great deal to three persons, Rothbard, David Theroux, and Roger Garrison. Theroux had heard about the book manuscript while at the Pacific Institute, where we had originally planned to publish it, but where for reasons not made clear to us publication never panned out. Theroux signed us up to publish the book from his new think tank, the Independent Institute, from which he effectively promoted the final product with religious fervor. At his urging, we wrote pieces drawing on the book for such journals of opinion as *Society, Chronicles, National Review, Policy Review,* and *Critical Review.* The manuscript was reviewed by Garrison, who gave us the most intelligent extended comments on our ideas to date, and we increased its Austrian content at his urging. At the same time, Theroux successfully reached out to libertarians and conservatives of every stripe for endorsements, ranging from Milton Friedman to Vaclav Klaus (then Prime Minister of the Czech Republic), not to mention such non-conservatives as Kenneth Boulding and Robert Reich(!) This helped acceptance of the volume, which appeared in 1993, twelve years after we had written the first paper. By the mid-1990s, Theroux had talked the New York University Press into doing a second edition of the book (Vedder and Gallaway 1997), in which we engaged in dozens of pages of econometric pyrotechnics designed to show mainstream economists that we had considered all of their dubious objections to the manuscript. In short, in spite of using some mainstream methodology (e.g., regression analysis), the corpus of research that comprised this book was ultimately and largely rejected by the mainstream journals, but the new "Austrian infrastructure," broadly defined to include a libertarian think tank and even a governmental agency with an unusual free-market orientation,

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came to our rescue in a fashion that allowed for a moderately broad dissemination of our ideas.

THE ROLE OF THE AUSTRIAN "INFRASTRUCTURE"

Our story can probably be told countless times. Given the existence of "demand" curves for Austrian economics by journal editors that more often resemble B than A in Figure 2, it makes sense for the Austrians to have started their own publication outlets, including the *Quarterly Journal of Austrian Economics,* the *Review of Austrian Economics*, not to mention newsletters, Website chat rooms, edited volumes, etc. In the context of Figure 2, these outlets have curves that are positively sloped, that is, where the more Austrian the article is, the greater the probability of acceptance.

Thus a short-run goal of the Austrian infrastructure that supports these scholarly endeavors is to increase the quantity of disseminated research utilizing Austrian perspectives. A second goal, however, is a long-run objective of altering the "demand" curve for Austrian scholarship in mainline journals so that it resembles C (no bias for or against publication based on the Austrian content), or even becomes positively sloped (discrimination in favor of Austrian ideas). Alternatively or additionally, the goal is to make the Austrian alternative journals into mainline publications. These goals are furthered by the teaching (as opposed to research) function of the Austrian infrastructure. For example, the Ludwig von Mises Institute's "Mises University" and "Rothbard Graduate Seminar" provide a favorable presentation of Austrian perspectives to large numbers of students and young faculty members. Presumably some of these individuals will, in time, write articles for both mainstream and Austrian outlets, and even become editors and referees for mainstream publications. With the passage of time, the sheer volume of research with some Austrian orientation should lead to some reductions to the barrier to entry into the broader world of economic ideas.

CONCLUSIONS: THE DUAL ACADEMY

Persons with an Austrian perspective must evaluate the probability that an Austrian message will reduce their publication chances in mainstream journals. Since historically the discrimination against Austrian scholarship has been high, a new Austrian academic infrastructure has emerged. We have a Dual Academy: mainline journals and universities, and an alternative Austrian-classical liberal research and teaching infrastructure. Institutions evolve to meet needs prompted by human action.

Very often today, the costs of publication to the author are increased by the convention of making editorial decisions by groups of persons. One has to satisfy not one editor, but a group of scholars. Presumably this is done to assure quality control, and to balance the supply and demand for papers using non-price methods. While this raises the cost of publication in general, it particularly hurts those whose ideas deviate from the ideological mainstream, including Austrian economists. This, has led to the Dual Academy. As the Internet and other forms of

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electronic communication grow, it may well be that the conventional modes of communication (academic journals and university classrooms) may lose some of their importance. While much Internet academic discourse is qualitatively lacking, at least it is not censored. The Austrian infrastructure and technological change, then, have reduced the ability of mainstream economists to submerge views that vary dramatically from their own perspective on the world. This bodes well for the continued growth in the early twenty-first century in the Austrian "market share" in the world of ideas.

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On Secondhandism and Scientific Appraisal

David N. Laband and Robert D. Tollison

There is a quiet but nonetheless significant and persistent disagreement among members of the scholarly community of economists regarding appraisal of scientific merit. On one side are those who believe, implicitly or explicitly, that there is a competitive market for scientific ideas in economics in which major contributions (and the individuals who make them) are identified relatively efficiently. In contrast to what we might refer to as the free-market side of the discipline are those who believe that the prevailing process of scientific appraisal is quite inefficient and therefore unreliable. That is, the process is characterized by market failure.

The ongoing skirmishes between these two camps involve two quite distinct aspects of scholarship: (1) the imperative, as it were, for an individual to publish in *mainstream* economics journals to be taken seriously by the profession as a whole, and (2) the use of citations as a measure of the impact of a contribution to the scholarly literature of economics. We address these issues in turn.

Publishing in the "Mainstream" Economics Journals

To be relevant in any meaningful sense to a community of scholars, scientific truth cannot simply be self-evident. It is not enough for the individual *qua* scientist to maintain that he has been enlightened and *knows* the *truth*. The community of scholars must be convinced of the veracity of that truth. The truth is not relevant if it is not a shared truth—the smaller the set of true believers and the greater the group's tendency to speak only among themselves, the more likely the group is to be regarded by the rest of the scientific community as merely a cult.[1]

Convincing other scholars that your scientific contribution is substantial may indeed be difficult, especially if that contribution is at odds with prevailing orthodoxy.

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[1]This is a difficulty that has plagued, among others, Austrian economists—they win no converts by ignoring their fellow scholars and non-scholars who happen to not share their world view in favor of preaching to the choir, a point made by Rosen (1997).

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However, it is axiomatic that you cannot convince others if you do not communicate with them. You may not convince others even when you do communicate with them, but at least you've got a fighting chance. Like it or not, professional communication in economics occurs primarily through our mainstream journals.

One of the arguments made by those who believe that the journal publication process in economics is characterized by market failure is that the agency problem with respect to journal editors and referees is substantial. Yeager (1997, p. 161) argues this point:

> The subscriber to journals has an influence more attenuated and more subject to manipulation by others than the influence of the consumer of ordinary goods and services. Editors and referees have scope for heeding fads and cliquish and personal considerations. They are not risking their own money.

As for tendencies of journal editors and referees to heed fads or to permit personal considerations to influence their professional judgment and behavior, no more or less can be said for retailers in product markets. Both are aptly characterized as middlemen in the production process. A furniture manufacturer produces a new chair. He tries to convince retailers to offer the chair to final customers. The retailers' decision may be affected by fad or personal considerations. In the academic market, new theories are produced by scholars who try to convince journal editors and referees to offer their product to final customers. We concede that middlemen in product markets have their own money at risk, which is not strictly true of journal editors and referees. However, the fact that no cash changes hands or is directly at risk in academic markets does not imply that the middlemen have nothing at stake. Professional reputations are at stake. Most academic scholars agree that money *per se* is not the only consideration that motivates their efforts. We submit that the desire to develop and maintain, if not enhance, one's professional reputation serves as strong motivation for most scientists. With specific regard to journal editors, the desire to enhance professional wealth (in the form of collegial esteem) motivates them to be diligent retailers of scientific products. Thus, the *differential* attenuation of consumer influence on producers in the academic market that Professor Yeager ascribes to the personal quirks and passing fancies of the middlemen seems to us to be quite doubtful.[2]

The notion that journal editors are cliquish, in the sense that they exhibit favoritism with respect to the papers they (don't) publish has long been a topic of private conversation among economists and, on occasion, commentary in the professional literature (Gerrity and McKenzie 1978; Laband 1985). The problem with this perception is that it is not supported by the facts. Although journal editors occasionally publish subpar papers authored by colleagues and former graduate students, on balance their use of professional connections enables them to

[2]We note that Tollison has served for ten years as a joint senior editor of *Public Choice*.

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identify and capture relatively high-impact papers for publication (Laband and Piette 1994; Laband and Smith 1995). This behavior is consistent with a well-functioning competitive model of the journal market and inconsistent with a market-failure model.

It seems to us that the putative shortcomings of journal editors and referees likely reflect the sour grapes of relatively unsuccessful contributors to those journals. Again, the facts are quite well-known: most of the scholarly submissions to the mainstream journals of economics are rejected for publication, including, on occasion, very good ones (Gans and Shepherd 1994). This means nothing more than that the vetting process is subject to type I error. Anyone who has had one or more contributions published by our top mainstream journals almost certainly will confess to having had many more papers rejected for publication by these journals. To make contributions we must convince nonbelievers. This is difficult; even the best and brightest among us usually fail. To succeed as scientists we must come to grips with rejection and failure to convince others. Sometimes the failure is temporary, overcome by redoubled effort to prove one's point. Sometimes the failure is permanent and the putative contribution must be discarded as either incorrect or insubstantial. The point is, we all understand that rejection is a critical element of the process of advancing economic science. Individuals who are better able to deal with seemingly personal rejection and who can move beyond the disappointment of being informed that their ideas are not as relevant as they would like to believe are likely to be more successful contributors to economic science than individuals who have trouble accepting such rejection. The latter are more likely to react by finding and clinging to others who are willing to reinforce each other's world view, no matter how removed those views may be from the canons held by the scientific community at large. Not surprisingly, the members of such a group likely will believe that their world view is *the* correct one and that they are being discriminated against by journal editors and referees.

This brings us to the general grumbling, reviewed in Yeager (1997), about why so few so-named Austrian economists publish in the regular journals of economics. What can one say but that their work is flunking an important market test? Criticizing the journals and other icons (the favorite Austrian whipping boy is a version of neoclassical economics that is about 50 years old) strikes us as an attempt to change the subject, become more isolated, dated, and introverted, and forge a basically cult-like existence, in which, like Alice, up is down and down is up, so that failing a market test is really passing it! Who cares about the *American Economic Review*? We will just chat among ourselves. Or so goes what passes for Austrian economics in the literature that Professor Yeager dotes on.

Imagine a young tennis player who complains that he cannot win his matches because the linesmen call too many of his shots out. Sure, the linesmen make mistakes, but does anyone think that the best players are not playing in the major tournaments? It is one thing to win the Austrian Open and quite another to win Wimbledon.

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CITATIONS AS A MEASURE OF SCIENTIFIC WORTH

Among academic economists there seems to be widespread acceptance of citations as a useful measure (with acknowledged imperfections) of the impact of a contribution to our scholarly literature. There are citations-based rankings of individual economists, economics departments, and economics journals. Citations are used, directly or indirectly, in the determination of fitness for raises, promotions, and other forms of academic recognition by a number of economics departments throughout the United States.

It has been argued by several scholars (including ourselves) that citations constitute an academic analog to dollar voting in private goods markets. However, the analogy is not perfect. Dollars spent on a product reflect the consumer's ex *ante* forecast that the item purchased will produce value in excess of the purchase price. This forecast may or may not be validated *ex post*. In this sense, dollar votes are an imprecise measure of value. More accurately, they reflect minimum expected value. Citations, by contrast, clearly reveal that the academic consumer received value from the product being cited, irrespective of whether the citation was positive or negative. This is because the citations are issued only after purchase and consumption of the product. Thus, a case can be made that the academic market conveys product information even more accurately through citations than do markets for goods and services using dollar voting.

However, not everyone is comfortable with market evaluations of scholarly contributions. For example, Yeager (1997) argues that relying on markets amounts to riding "piggyback on the appraisals of other people." We are puzzled by this indictment. The problem as we see it is that the alternative to relying on markets to assign value to scientific contributions is that we must rely on the ostensibly firsthand knowledge of some central authority, such as Yeager. We confess to just a bit of trepidation in this regard, on two counts. First, the central authority's knowledge of the true scientific value of every prospective contribution to economic science simply must be frail, at best. Second, personal quirks, fancies, weaknesses for fads, and personal tastes render the judgment of the central authority suspect. Are any of us less subject to these same failings?

To drive the relevance of our concerns home, let's talk about a practical problem that characterizes the scientific community. Department heads are required periodically to evaluate the merit of faculty members' scholarly contributions.[3] How efficiently are they able to reach their conclusions through firsthand review and contemplation? They will be mostly ignorant about relevant theoretical, empirical, and technical aspects of many, if not most, of the contributions they read. Start with the pervasive professional ignorance of even the most knowledgeable department head, mix in the press of other administrative and academic responsibilities he faces, season with a three-week deadline for turning in their

[3]Laband was department head at Auburn University (1994–99); Tollison was department head at Texas A&M University (1973–76).

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evaluations of faculty performance, and see how palatable the performance evaluations are to faculty scholars. There simply is little-to-no hope that department heads, through firsthand inspection, can evaluate efficiently the scientific contributions of their faculty.

It is much more likely that firsthand inspection by journal editors and reviewers who are relatively more familiar with the subject matter in question will place an appropriate value on the prospective scholarly contributions. The values will be reflected by the quality of journal that publishes each contribution. The fundamental question is whether the error attributable (for whatever reason) to relatively more knowledgeable appraisers with a reputational stake in the outcomes is greater or less than the error attributable to relatively less knowledgeable appraisers with no stake in the outcome. A simple experiment would clearly indicate empirically where the members of the scientific community expect the greater efficiency in appraisal. Give each member of the community a choice of having the value of his scientific contributions determined by his current department head's personal inspection or by a simple count of articles (or pages) published in scientific publications, adjusted for quality. This is a clear choice between market and nonmarket valuation of scientific contributions.

We also note that firsthandism is far more subject to interest group politics and rent seeking in a departmental setting than is secondhandism. The general idea is that those who spend more time in the department head's office receive raises that bear little relation to their annual productivity. These types of behaviors do not impact academic rewards under a secondhand (market-based) approach.[4]

All this likely will be taken as knocking Austrian economics, but that is not the point. The point is not first- or second-handism; the point is crybabyism about market tests. Austrian economists can and should be held to account by tests that are not of their own devising. This is, of course, pretty much the point Rosen (1997) was making.

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[4]This is a testable hypothesis. Consult the university budget in your library. Regress changes in pay as a function of age, number of committees served on, teaching load, and quality-weighted publications. In a rent-seeking department raises will bear no relation to productivity, especially publications. The omitted variable, time spent in the chair's office, is difficult to quantify, but everyone knows who wears these scarlet letters—"rent seeker."

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AGAINST MISTAKEN MORALIZING

LELAND B. YEAGER

THE MORAL CASE AGAINST NONCOMMODITY MONEY

My many years teaching at the University of Virginia brought me under the influence of Rutledge Vining and his writings (e.g., his 1984). As Vining explains, sensible discussions of reform focus on observed deficiencies of the institutions in question and on how their operation might be made more satisfactory. To Hans-Hermann Hoppe, joined by Jörg Guido Hülsmann and Walter Block (1998), the central deficiency of our existing monetary institutions is their fraudulence, their radical immorality. An adequate reform would abolish fiduciary media and restrict the performance of monetary functions to hard money (commodity money like gold) or to certificates and deposits backed *100 percent by hard money actually held in reserve.*

Hoppe, Hülsmann, and Block (HHB) appear to take the phenomenon and concept of money as too basic or too familiar to require close examination of money's functions. They refer to money as if it consisted or properly would consist of pieces of property: things, objects, commodities. They repeatedly use expressions like "money (gold)," "property (money)," "money property (gold)," "property (appropriated goods)—whether consumer goods, producer goods, or money—," and a "fundamental distinction between property and a property title." "Titles to money are—and should be—backed by money in the same way and for the same reason as titles to cars are and should be backed by cars. . . . a title to money backed by assets other than money is a contradiction in terms" (p. 25).

HHB observe that demand claims on money, notably banknotes and demand deposits, circulate as if they either were money in the above narrow sense or else purported to be titles to it. Here, as they see it, is the flaw in fractional-reserve arrangements. It is not possible for more than one person to hold full and exclusive title to the same piece of property; it is not possible for valid titles to exist in greater volume than the total amount of property they supposedly represent. The pretense of

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doing something physically or logically or legally impossible, especially in hope of drawing advantage from this pretense, is immoral. A contract of this kind and purpose is just as morally and legally invalid as a contract involving square circles or (in the present state of biological knowledge) flying elephants.

Defenders of fractional-reserve banking (e.g., Selgin 1988; Selgin and White 1996) have rejected a more traditional charge of fraudulence by observing that practically no holder of a checking account supposes that his bank is safeguarding his money in its vault in the form of actual coins and currency and by further observing that bankers and their depositors understand what is going on and agree to these practices because they find them advantageous to themselves. HHB outflank this defense with their new charge of fraudulence summarized above: no agreement purporting to do the impossible can be morally and legally acceptable.[1]

HHB distinguish between the multiplication of fraudulent titles to money and the legitimate sale of permits to park in a lot that could not accommodate all permit-holders' cars at once. The permits do not purport to be exclusive titles to slots within the parking lot. Instead, they are mere licenses to hunt for currently unoccupied slots.

My central quarrel is with HHB's conception of money in both the narrow and broadened senses—as commodities or as titles or claims to commodities. Their conception presumably traces to a favorite strand of Austrian economics. On Carl Menger's account of the origin of money (1892, and in greater detail in his 1970), money evolved in historical stages from commodities found particularly convenient in barter transactions. As Menger would agree, however, the essence of a developed institution is not necessarily specified by its genesis or most primitive form; to suppose that it *is* commits the "genetic fallacy." Institutions do evolve, even radically; and changes in degree can cumulate into changes of kind. Modern money is an example: it simply is not and does not even purport to be physical commodities or titles to them.

One might try to analogize banknotes and demand deposits to HHB's parking permits: instead of purporting to be exclusive property titles, they are authorizations to demand redemption in narrow money in expectation that claims actually exercised will normally be satisfied but in recognition that far from all claims could be satisfied at once. I do not insist on this interpretation, however, for it too fails to capture the essence and functions of money in the modern world.

Money as a Clearing Device

Money serves clearing, which is the multilateral offsetting of claims and obligations against one another. Claims acquired by delivering goods or services to some

[1] Huerta de Soto (1998, esp. chaps. 1–3) musters impressive scholarship, especially in legal history, to document points essentially the same as those of HHB. Still, no amount of scholarly documentation of points that, even if valid, would fail to establish the position at issue can make those points relevant after all.

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trading partners pay for goods or services received from other trading partners. Schumpeter offers a simple example (1970, p. 227): a surgeon operates on a singer, the singer performs at a lawyer's party, and the lawyer handles a legal case for the surgeon. If the three services happened to have the same market value, the three parties might arrange to recognize that they were square with one another without transferring any money or property.

Clearing might just conceivably be accomplished by the all-around centralized recording and offsetting of transactions; but the complexity and costs of such an operation in the vast modern economy and the loss of the information otherwise generated in decentralized market transactions, as well as its Big Brother aspects, rule such centralization out. Not even being realistically feasible, it serves only as a pole of comparison and expository device. Decentralized record-keeping is more practical and economical. In this decentralized process, coins, notes, and bank accounts are memoranda or tickets, so to speak—receipt vouchers for the values of goods and services delivered and generalized claims on whatever the market will offer for sale at prices that transacting parties will agree on. A fuller description must also recognize gifts, loans, financial intermediation, and capital accumulation; the role in economic calculation of the unit of account in which the tickets are denominated; and the flexibility and other advantages afforded by such a system. Such a description does not deny but penetrates more deeply into money's role as medium of exchange.

How do we know that its function as a clearing device is central to modern money? We can understand that function by studying the writings of Kocherlakota (1998), Moini (1999), Shah and Yeager (1994), and Yeager (1999), and especially the writings of Kuenne (1958) and Schumpeter (1956). More directly, we can understand that central role by observing and pondering the forms that money takes and the functions that it performs every day in the world around us.

Unit of Account, Base Money, and Pegging

The tickets or memoranda that constitute modern money must, as mentioned, be denominated in some unit of account, some pricing unit. Traditionally that unit was some quantity of gold or silver. In the United States nowadays, it is a fiat unit, the dollar of base money issued by the Federal Reserve system (in the form of Federal Reserve notes and deposits in the Federal Reserve banks) and in relatively small volume by the Treasury (as token coins). The unit of account is essentially the scruffy dollar bill, whose value depends on nothing more than the demand to hold it (and its fellow components of base money) confronting a limited supply. All other countries now have essentially the same system, except for countries whose money units are defined by or pegged to one or a basket of the units—fiat units—of other countries.

The purchasing power of such a unit is ill-defined and precarious, determined as it is by a changeable demand confronting a supply whose adequate

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management strains the expertise of the central bankers and their impermanent capacity to resist political pressures. Other circumstances contribute to making this supply–demand situation precarious: the bulk of U.S. base money consists of paper notes, the bulk of which, in turn, is held abroad (partly for lubricating the drug trade); most of the rest of the base money is held as reserves, directly and indirectly, against vastly pyramided amounts of bank accounts and near-moneys; the demand for existing base money depends partly on government impediments to use of alternative units of account and media of exchange; and financial innovation keeps developing new methods of accomplishing payments without money of any traditional sort, thus further reducing the relative importance of base money.

All of this the Federal Reserve has to cope with, somehow. The situation may fairly be described as preposterous. One trouble is the dollar's undependable purchasing power. Another is the possibility of bank runs and resulting disruptions. More conspicuous in recent decades has been the counterpart of this fragility on the international scene–the crises that occur when market participants lose confidence in the exchange rate at which a country's currency is pegged to other currencies on the basis of merely fractional reserves of gold and foreign exchange. Palliatives to such domestic and international difficulties are available and have been attempted, although at the cost of bringing disadvantages of their own. Recognizing these difficulties, which do indeed involve fractional reserves, is no concession on my part; for I have long been pointing them out (citing economic history and economic theory more than moral principle).

Reform

How inadequate a reform it would be to require 100-percent reserves of fiat base money of the present unsatisfactory sort! Requiring 100-percent reserves of this or a more satisfactory base money, though conceivable, is not the only possibility; indeed, for reasons alluded to below, it is not even realistically possible. A more fundamental reform would reject as any sort of model both our existing fiat-money system and a 100-percent-reserve system. It would abolish the pegging of some kinds of money (and near-moneys) to merely fractional reserves of any money of some more "ultimate" kind. It would abolish any distinction between base money and the more ordinary and voluminous kinds of money by abolishing base money itself. (All money would be "inside money," in the terminology of Gurley and Shaw 1960, chap. 3 and *passim*; and no particular reserve medium would exist to be held in either 100-percent or fractional amounts.) The suggested reform would carry to the final degree the already observed dwindling relative importance of base money. Instead of being defined by any base money, the unit of account would be defined directly by some commodity or, better, by an assortment of goods and services, leaving the issue of money and other financial instruments to competitive private enterprise. Among other advantages, such a system would enhance money's role in financial intermediation through improving its operation–subsidiary, of course, to its medium-of-exchange function–as a vehicle of genuine saving.

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(The academic literature on these possibilities has begun finding some resonance in the world of affairs, as in a 1999 speech by Mervyn King, deputy governor of the Bank of England.)

Before urging their own 100-percent-reserve reform, HHB should consider the difficulties of implementing it and the consequences of even trying to do so. Here, without repeating them, I allude to familiar discussions (e.g., Selgin 1988; Selgin and White 1996) about the strong incentives impinging on all participants to practice fractional-reserve banking—if a distinct base and reserve money exists at all—and to devise innovative ways around any prohibition of that practice. Entrepreneurs in a free-market economy work to ferret out inefficiencies, and the exclusive use of precious metals (or warehouse receipts for them) as memoranda or tickets in the decentralized economy-wide clearing process would be a glaring inefficiency. Draconian interventions would be necessary to fight evasions of any such requirement.

Style of Argumentation

Would HHB really persist in advocating their reform even if it would entail misery and if an alternative reform would conduce to prosperity and happiness? Do they really mean to reject, as not only economically unsatisfactory but downright immoral, any monetary and payments system other than one rooted in transfers of monetary commodities (like little metal disks fully worth their face values) or of claims fully backed by such commodities? That is what HHB do seem to be saying. If that is not what they mean after all, let them strive for greater clarity.

My questions are not at all meant to scorn morality in policy discussions. That a particular measure would infringe basic principles of morality is a practically conclusive objection to it. Morality is indeed important—but *why*? It is important because, as Ludwig von Mises explained, morality is essential to social cooperation and thus to people's chances for happiness.

What I object to is assertions about morality linked to misconceptions and word games concerning money and its functions, property, and titles. Modern money does not consist and does not pretend to consist of commodities. Banknotes, demand deposits, and the new means of payment being multiplied by modern technology do not even purport to be titles, whether valid or false, to underlying property.[2] What money is and what functions it performs are far better described by elaborating on the concept of record-keeping and clearing device.

[2] HHB appear to use the concept of title or property right with exaggerated sharpness. Titles are often fragmented or fuzzy. Titles may be split up by different aspects of an object or piece of real estate, time-sharing arrangements, and easements of various kinds. And who, for example, owns the right either to fill the air in your immediate neighborhood with loud sounds or to prevent such sounds? Suppose that the owner of a quantity of (fungible) gold coins agrees to dilution of his title in return for advantages that he considers more than adequate compensation. No question of a pretense at multiple *full and exclusive* titles to that quantity of coins need arise.

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HHB's present style of argumentation parallels, by the way, Hans Hermann Hoppe's well-known claim to derive the whole libertarian policy stance from his so-called logic of argumentation and Murray N. Rothbard's attempt to derive the same stance from the Lockean axioms of self-ownership and first appropriation. All are attempts to derive sweeping conclusions essentially from one or a very few moral axioms. Moralizing does have its place, but it is no substitute for detailed economic analysis of existing institutions and of the likely operating properties of contemplated reforms.

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MISESIAN ECONOMICS AND THE RESPONSE TO A PRICE CHANGE

RODOLFO A. GONZALEZ

A mainstream objection to Misesian economics is that one cannot derive the income effect of a price change from the Misesian pure logic of choice, and therefore that Misesian theory is incapable of explaining the behavior of individuals who respond to a wage decrease by working more.[1] Pascal Salin, in an article in the *Review of Austrian Economics* (1996), counters this objection by denying the existence of the income effect and the possibility of a backward bending labor supply curve. In contrast to Salin, Murray N. Rothbard (1962) acknowledges the possibility of a backward bending labor supply due to the income effect of a wage change. Rothbard, however, does not show how this outcome can be derived from the Misesian pure logic of choice.

It could be that Rothbard's statements on the labor supply are merely an *ad hoc* addition to Misesian economics, and that Misesian theory cannot explain why more labor may be forthcoming at a lower wage. But that is not the case. This note will show that the possibility of a backward bending labor supply can be derived from the Misesian pure logic of choice, and therefore that it is Rothbard's, and not Salin's, position on labor supply that is consistent with Misesian theory.

For simplicity, consider an individual who consumes only two goods, bread and leisure. Let this individual obtain bread only by supplying labor, and assume that initially he faces a constant wage of one loaf of bread per hour of work. Given this trade-off between bread and leisure, suppose that he chooses to supply eight hours of work per day, and therefore to have a daily consumption of eight loaves of bread and sixteen hours of leisure.

Let the wage now fall to half a loaf per hour. In Salin's eyes, this means that the opportunity cost of leisure has decreased, and that the logic of choice implies that our individual must choose to consume more leisure, and therefore to supply

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[1]This paper employs the term Misesian rather than Austrian because it deals with Misesian theory, and there are economists that are labeled Austrian who do not strictly adhere to Misesian theory.

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fewer hours of work per day. But his analysis of what happens when the wage falls is contrary to Misesian theory. It treats the cost faced by a decisionmaker as something that exists outside of his mind, and that can be objectively measured in units by others.[2] The amount of bread that our individual must give up to consume leisure has, of course, decreased. But the opportunity cost of consuming an additional unit of a good is not the physical amount foregone of another. It is instead the subjective value to the decisionmaker of what he has to give up to consume it.

A core problem with Salin's analysis is that it treats the wage fall as if it had an effect only on the rate at which leisure can be converted into bread. In Salin's view, the wage fall alters the individual's marginal valuation only, indirectly, by inducing an exchange. He fails to see that the wage fall can also alter the subjective marginal valuation through the decrease in the individual's consumption opportunity set. A wage change alters both the marginal and the average return to labor, and therefore its effect is equivalent to a combination of a *ceteris paribus* change in the market terms of trade and a *ceteris paribus* change in the consumption opportunity set of the decisionmaker.

A *ceteris paribus* change in the terms of trade that allows the individual to consume the same amount of both goods as before, can affect the marginal valuation only by inducing him to trade units of one good for units of the other. In contrast, a change (decrease or increase) in the individual's consumption opportunity set, holding the terms of trade constant, can (directly) affect the subjective marginal valuation by altering the amount that he can consume of a good, holding constant his consumption of the other. This *ceteris paribus* change in the consumption opportunity set alters the purchasing power of the individual, and most economists will refer to it as a change in income. Since this change can alter the subjective marginal valuation, it can induce the individual to modify his behavior until a new balance is established between his marginal valuation and the market terms of trade. Most economists would refer to this adjustment as the income effect. Salin may want to call it something else, but a different name will not alter in any way the implications that follow from the pure logic of choice.

Prior to the fall in the wage from one to half a load of bread, our individual had chosen to consume eight loaves of bread and sixteen hours of leisure. At that mix of bread and leisure, his subjective marginal valuation of bread in terms of leisure must not have been significantly different from the implicit leisure price of bread. Otherwise, he would have chosen a different mix.

The fall in the per hour wage increases the implicit leisure price of bread, and contracts his consumption opportunity set since now for any given amount of leisure consumed, he cannot consume as much bread as before. If our individual

[2]The subjective nature of cost is a core point of the Austrian tradition. In contrast mainstream economists frequently fall in the error of treating cost as something objective, that can be observed and measured by the economic analyst. See Buchanan (1969).

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were to continue to work for eight hours, he would be able to consume only four loaves of bread instead of the original eight. It follows from the principle of diminishing marginal utility, that bread's marginal utility must be higher, given the same amount of leisure, at four loaves than at eight.[3] Therefore, at this lower amount of bread and same amount of leisure, his valuation of an additional unit of bread in terms of leisure could be greater than before.

In fact, his marginal valuation of bread in terms of leisure must now be greater than before, unless one assumes that his marginal utility of leisure is, *ceteris paribus*, inversely affected by the amount of bread, and that the magnitude of that assumed inverse effect is at least enough to offset the increase in bread's marginal utility. These assumptions are not incompatible with the axioms of the pure logic of choice.[4] Therefore, the logic of choice does not allow us to conclude that the marginal valuation of bread in terms of leisure must definitely be greater, for our individual, at the lower quantity of bread.

For the purpose of this note, however, it is enough to have shown that our individual's marginal valuation of bread can increase with a fall in the wage. It is logically possible then for his valuation of an additional unit of bread in terms of leisure to increase by more than the increase in the amount of leisure that he must give up to obtain it. Suppose that this is what happens to our individual when the wage falls from one to half a loaf of bread per hour. Since his subjective marginal valuation of bread is now higher than the new and higher implicit leisure price of bread, the Misesian pure logic of choice implies that he will choose to sacrifice some leisure in order to consume more than four loaves of bread. Hence, he will supply more labor at the lower wage.

This note has shown that the possibility of the income effect of a price change is implied by the Misesian pure logic of choice. This note has not assumed that our individual must consume more than four loaves of bread to survive.[5] No *ad hoc* assumption has been employed. Instead, the possibility of a backward bending labor supply has been logically derived from the subjective nature of value and the principle of diminishing marginal utility. Thus, it is clear that Salin's views on the income effect of a price change are wrong. It is Rothbard who is correct and consistent with Misesian economics.[6]

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[3]The principle of diminishing marginal utility is derived in the Misesian pure logic of choice from the proposition that additional units of a good are used to satisfy less urgent wants.

[4]Most economists would dismiss these assumptions since they believe, based on introspection and observation, that leisure is a normal good. But the pure logic of choice is silent on the question of how the demand for one good is affected by a change in purchasing power.

[5]This assumption is neither necessary nor sufficient to get a backward bending labor supply. The only logical conclusion that follows from this assumption is that either the individual's marginal valuation of bread exceeds its implicit leisure price or he will choose to die.

[6]One can only speculate as to why Rothbard did not show how he had reached his position on the labor supply curve. A simple and reasonable explanation, given Rothbard's extraordinary logical mind, is that he felt no need to prove something that followed so clearly from the subjective nature of value and diminishing marginal utility. It is easy for a logical mind not to see that others, less logical, won't see what is obvious.

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In Defense of Fundamental Analysis: Securities Arbitrage and the Efficient Market Theory

Greg Kaza

Frank Shostak (1997) raises valid points in defending fundamental analysis against the efficient market theory (EMT), which holds that the market price of securities always fully reflects available information. According to EMT, it is difficult, if not impossible to outperform the market by consistently picking "undervalued" securities using fundamental analysis. Citing the work of the late Austrian economist Ludwig von Mises (1881–1973), Shostak debunks the EMT framework which views the act of investing in securities as no different from casino gambling (Mises 1963, pp. 809–10).

Securities arbitrage provides another challenge to the EMHT framework, and is fully compatible with the Austrian School of economics. Arbitrage involves the simultaneous purchase and sale of the same securities in different markets to take advantage of price discrepancies that exist. Arbitrage opportunities arise from corporate mergers, hostile takeovers and reorganizations. In a typical example, a merger, the arbitrageur purchases the security of the firm being bought and simultaneously "goes short" (sells) the security of the acquiring firm upon announcement of the deal. An investment opportunity emerges for the arbitrageur in the price spread that develops between the market price for the security of the firm being purchased and the actual buyout or takeover price. The risk for the arbitrageur is that the deal falls apart prior to its closing.[1]

Until the late 1970s, arbitrage was generally unknown outside Wall Street. One reason is its image as a highly intricate, even mysterious art well beyond the understanding of ordinary investors. The shroud of mystery was finally ripped away when arbitrageurs' often pivotal role in the rising volume of corporate takeover deals became increasingly visible (Welles 1981). The image of the prototypical arbitrageur was Ivan Boesky, later convicted of insider trading. But far more

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[1]The classic treatise on arbitrage is Weinstein (1931).

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important to a critique of EMT is the continuous 73-year-old arbitrage record of Graham-Newman Corporation, Buffett Partnership, and Berkshire-Hathaway, Inc., investment entities operated by practitioners of the fundamental analysis dismissed by EMT's academic adherents.

One of Graham-Newman's principals, the late Benjamin Graham (Graham and Dodd 1934), is the father of fundamental analysis. [2] The firm operated from 1926 to 1956. Billionaire investor Warren Buffett headed the Buffett Partnership (1956-1969) and has operated Berkshire-Hathaway, Inc., with his partner, Charles Munger, since the mid1960s. In this 1988 letter to Berkshire shareholders, Buffett notes EMT "became highly fashionable—indeed, almost holy scripture—in academic circles during the 1970s. . . . As corollary, the professors who taught EMT said that someone throwing darts at the stock tables could select a stock portfolio having prospects just as good as one selected by the brightest, most hard-working security analyst." Buffett notes EMT was

> embraced not only by academics, but by many investment professionals and corporate managers as well. Observing correctly that the market was *frequently* efficient, they went on to conclude incorrectly that it was *always* efficient. The difference between these propositions is night and day. (Buffett 1988, p. 37)

While employed at Graham-Newman, Buffett made a study of its earnings from arbitrage during the entire 1926-1956 lifespan of the company. "Unleveraged returns," Buffett writes, "averaged 20 percent per year. Starting in 1956, I applied Ben Graham's arbitrage principles, first at Buffett Partnership and then Berkshire. Though I've not made an exact calculation, I have done enough work to know that the 1956-1988 returns averaged well over 20 percent." During the same time period, he notes, "the general market delivered just under a 10 percent annual return, including dividends. . . . That strikes us as a statistically-significant differential that might, conceivably, arouse one's curiosity."[3]

Berkshire-Hathaway has continued to generate returns greater than the market in the subsequent decade by applying fundamental analysis, including arbitrage. Yet EMT adherents, centered in academia, stubbornly defend the theory and dismiss Buffett's success as an anomaly. Lawrence C. Cunningham, a law professor at Yeshiva University who has edited a compilation of Buffett's essays, observes:

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[2] Graham developed a general formula for analyzing potential arbitrage situations where G is the expected gain in the event of success; L is the expected loss in the event of failure; C is the expected chance of success, expressed as a percentage; Y is the expected time of holding, in years; and P is the current price of the security. The annual potential gain from an arbitrage is shown as follows:

$$\frac{C \times G - L(100\% - C)}{Y \times P}$$

[3] In his 1987 letter Buffett (1988, p. 17) writes, "Though we've never made an exact calculation, I believe that overall we have averaged annual pre-tax returns of at least 25 percent from arbitrage."

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> Threatened by Buffett's performance, stubborn devotees of modern finance theory resorted to strange explanations for his success. Maybe he is just lucky—the monkey who typed out Hamlet—or maybe he has inside access to information that other investors do not. In dismissing Buffett, modern finance enthusiasts still insist that an investor's best strategy is to diversify based on betas or dart throwing, and constantly reconfigure one's portfolio of investments. (Cunningham 1998, p. 13)

Adherence to EMT forces one to conclude the market cannot be outperformed, and leads one to liken investing in securities to casino gambling. The historical record of investors employing arbitrage to beat the market stands as a powerful confirmation of Mises's rejection of this thesis. The entrepreneur, Mises writes, is not a gambler. Rather, the entrepreneur

> chooses that investment in which he expects to make the highest possible profit. . . . The fact that a capitalist as a rule does not concentrate his investments, both in common stock and in loans, in one enterprise or one branch of business, but prefers to spread out his funds among various classes of investment, does not suggest that he wants to reduce his "gambling risk." He wants to improve his chances of earning profits. (Mises 1963, pp. 809–10)

An entire generation of students has been taught to accept EMT as gospel. They have learned about investing in securities in an academic environment that rejects fundamental analysis. With the Austrian School of economics as his starting point, Frank Shostak has begun the process of reexamining EMT. Applying arbitrage and the historical record of Benjamin Graham and Warren Buffett to EMT would continue this process of critical examination.

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PRIVATE-PROPERTY RIGHTS, ERRONEOUS INTERPRETATIONS, MORALITY, AND ECONOMICS: REPLY TO DEMSETZ

WALTER BLOCK

Professor Harold Demsetz and I have been involved in an intellectual dispute which has taken place over several years. I can hardly have a better debating partner. He is easily amongst the half dozen or so most eminent economists who has not (yet) won the Nobel Prize in this discipline.[1] To say that his contributions to the theory of property rights, regulation, law and economics, to mention only a few of the areas on which he has focused his attention, are highly regarded within the profession would be a vast understatement. Most important of all to me, he is one of the very few eminent economists who has been willing to engage me in intellectual combat.[2]

In Block (1977a) I tried to make two points. First, positively, that the Coasean (1960) model[3] depends upon the never-mentioned assumption that there were no

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[1]If "pababile" denotes a cardinal eminent enough to be a candidate for pope, then "nobelabile" indicates an economist likely to win this honor. Demsetz is on any reasonable short list in this regard.

[2]In my view, it is highly desirable to contend against the most accomplished of the exponents of perspectives with which I disagree. Accordingly, I have taken issue with such luminaries as Akerloff (Block and Anderson 1995), Bork (Block 1994), Brozen (Block 1994), Coase (Block 1977a, 1995a, 1996a), Demsetz (Block 1977a, 1995a), Due (Block 1989), Epstein (Block and Gordon 1985), Freeman (Block 1996c), Harberger (Block 1997), Katz (Block 1998b), Kirzner (Block 1977b), Modigliani (Block 1995b), Musgrave (Block 1989, 1993), Nozick (Block 1980; Block and Gordon 1985), Posner (Block and Gordon 1985; Block 1994, 1996a), Rees (Block 1996b), Shoup (Block 1989), Stiglitz (Block 1989), and Stroup (Block 1990). Not counting Demsetz, none, apart from Tullock (1998), and Yeager (1988) have at least so far seen fit to accept my invitation to debate. For my responses to them see Block (1988a) and Block (1998).

[3]Other critiques of Coase along these lines include Rothbard (1990), Cordato (1989, 1992), Krecke (1997), and North (1990, 1992).

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psychic costs or benefits involved (e.g., all costs were real, known to all parties, and hence objective). For Coase, if there were two parties contending for a given property right, as long as transactions costs were zero, it did not matter which of them was awarded the right as far as the allocation of resources is concerned. For example, suppose a farmer places a value on smoke-free air at $100, while it would cost the neighboring polluting factory owner $75 to install a smoke prevention device. If the court gives the nod to the manufacturer, then the agriculturalist would bribe him into installing the scrubber, and would do so for a price somewhere in between these two values, say, $90. There, each would earn a profit. The farmer would gain $100-$90=$10, while the firm would benefit to the tune of $90-$75=$15. On the other hand, if the judge found in favor of the farmer, he could and would insist on the clean air device. Of course the wealth positions of the planter and the corporation would be very different under the two legal regimes (in the first the farmer is out of pocket by $90; in the second, the manufacturer must pay $75) but in both cases the smoke prevention technology would be utilized, and resources would be allocated to farming in the same manner.

My objection to the foregoing was that it required the farmer to actually make a bribe (of $90 in this numerical case). But suppose his crops were worth $100 only in his own mind. That is, their market value was virtually zero, although the psychic income he derived from them was equal to the higher amount.[4] Then, he could not finance the bribe, based on a value of the crops of $100, as Coase implicitly assumed he could do.

I regard this as by far the less important of the two criticisms I was making against Coase. After all, to incorporate this point, all Coase would have needed was a footnote explaining the foregoing. Further, those who later trod in the path blazed by Coase, such as Demsetz and many others, were typically careful to guard against this oversight. I regarded this point, then, as a not unimportant footnote to the history of economic thought.[5] I was, at least in my own mind, making a small but significant correction to an edifice which was then already well in the process of taking over the economics profession, and has long since almost completely done so.

The second point I tried to make (Block 1977a) was normative; that the Coasean system in and of itself is an immoral one in that it denigrates and undermines private-property rights, and that this applies as well to Demsetz's analysis, which carries on in the same tradition.[6] Indeed, in some of my work since

[4]Operationally defined, this means that the farmer would not sell his holdings for less than $100.

[5]Coase (1960) is the most highly cited journal article in the economics profession. Any correction of it, even a minor one, must therefore be considered of at least some note.

[6]Radin (1987, p. 1851) goes far further than I in ascribing moral categories to economic analysis. She states: "the characteristic rhetoric of economic analysis is morally wrong when it is put forward as the sole discourse of human life." For a critique of her views, see Block (1996).

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that time, I have tried to hammer home this point.[7] This, I regarded as by far my more important contribution.

In his reply to me, Demsetz (1979) covered all of these bases, and then some. I certainly cannot criticize his article for avoiding the issues. On the contrary, he broadened and deepened the debate, making all sorts of challenges to my position. In addition to taking issue with my positive point about psychic income oversights and immorality, he berated me with criticisms concerning competition and sports, "Austrian Pure Snow Trees,"[8] ethics, God, religion and worship, tennis and noise pollution, homesteading, the ability of the free market to maximize utility *ex ante*, externalities, stability of property rights, free riders, offers of new products, rear-end collisions for cars (road socialism), the laundry vs. the factory, collision between a boat and a dock (water socialism), the last clear chance rule (railroad locomotive kills trespasser), judicial equity and overturning mistakes, "communal property rights," pedestrians asking for directions, paternalism, competition and monopoly, relativism, sociobiology, regulation, and the claim that after all is said and done, there are no real differences between us which concern freedom. Demsetz's was as thorough a critique as a debate junkie such as myself could wish.

I replied (1995a), answering each and every criticism of his. In his rejoinder, Demsetz (1997) disappointingly focuses mainly on one small subset of the debate, that concerning the first and relatively least important of the points I made in 1977a, related to psychic income. In this response, I shall once again comment on all the issues he raises.[9]

MORALITY

Demsetz (1997, p. 103) begins with a return visit to his analysis of the military draft. It would appear that he is still "stewing" over my (Block 1977a, p. 112) characterization of his position on this issue as "immoral"[10] (reiterated in Block 1995a, p. 65).

On this several comments. First, Demsetz (1997, p. 102) has just finished announcing that my "rumination on morals merits no response from" him. Why, then, on the very next page does he return to this very same subject? Let him either

[7]See Block (1995a, 1996a). See also Rothbard (1990), Cordato (1989, 1992a, 1992b, 1998), Krecke (1997), and North (1990, 1992).

[8]Calabresi and Melamed (1972, p. 1102, n. 29) also utilize Demsetz's Austrian Pure Snow Trees example.

[9]Demsetz (1997, pp. 101–02) complains of the fact that I (Block 1995a) took up too many pages, and allowed too long a time to elapse to reply to his article and was critical of mine (Block 1977a). I will not reply to these charges, since I think they have no place in a scholarly journal devoted to ideas.

[10]This part of the debate I am having with Demsetz is similar to one which has taken place between Posner and Kelman (1979, p. 688, n. 51) the latter of whom states: "As always, Posner poses as the tough rationalist fending off sissified moralists; his 'rationalism,' though is spotty, incomplete, and misleading. He thus manages to be both irrational and immoral, which may have been his aim in this little parody of Jonathan Swift's 'Modest Proposal.'"

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eschew this topic altogether, or discuss it without reservations. When he makes inconsistent declarations on it, it is difficult to know how to proceed.

Second, I do indeed consider Demsetz's (1967, repeated in 1997, pp. 102-03) views on the military draft in isolation to be an instance of positive, not normative economics (Rothbard 1973a). Does this mean they cannot be immoral? Not a bit. Suppose a chemist tells the Nazis, "The best way to maximize the killing of Jews, per unit of resources spent, is to do xyz." This, as it stands, in isolation, is certainly a positive statement, in chemistry, and can only be considered amoral, neither moral nor immoral. But the *uttering* of this statement in that context is an act which may reasonably be deemed immoral.

I do not consider Demsetz's statement, even the uttering of it, as immoral, in isolation. This is because it merely discusses internalization of externalities and resource allocation. However, when coupled with the Coasean analysis, which, remember, forms the background of the debate between Demsetz and myself,[11] it is very hard to resist this conclusion.

What does Coase have to say in this context? He states (1960, p. 2):

> The question is commonly thought of as one in which A inflicts harm on B and what has to be decided is: how shall we restrain A? But this is wrong. We are dealing with a problem of a reciprocal nature. To avoid the harm to B would inflict harm on A. The real question that has to be decided is: should A be allowed to harm B or should B be allowed to harm A? The problem is to avoid the more serious harm.

In other words, let us suppose, a man is about to rape a woman. The common, traditional view, the one we are asked by Coase to reject, is, How can we restrain the male party of the first part from inflicting himself on the female party of the second part against her will? But this is "wrong." Forcible sex is not a unidirectional harm, from the raper to the rapee, contrary to the unsophisticated view. Rather, it is "reciprocal." To avoid the harm to the woman by stopping the man would be to harm *him*.

Given very low transactions costs, moreover, it does not matter one whit for the allocation of resources or the so-called maximization of wealth[12] whether rape is legal; that is, for Coase, and presumably Demsetz and other law and economics advocates, it is a matter of total indifference whether the man should be allowed to rape the woman or not. For whoever values this more, the man (to force sex upon the woman) or the woman (to resist), will either bribe or be bribed so as to achieve optimal results, as we have seen in the previous example of air pollution concerning the farmer and the polluting factory owner.

Under the assumption of high transactions costs, in contrast, it is solely an *empirical* matter whether rape should be proscribed by law. Under "ordinary"

[11] That is, since Demsetz announces himself as willing to defend Coase, he is perforce stuck with the latter's views.

[12] The only issues of importance for the Coase-Demsetz law and economics worldview.

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circumstances, the legislature should indeed outlaw rape. This is, presumably, because the woman typically values resistance more than the man gains from forced sex. However, if the woman is promiscuous or a prostitute, and the man has been without sex for years (say, he was imprisoned or on a long sea voyage) and thus is greatly desirous of engaging in this activity, it is he who will value intercourse more than she will rate non-interference. He will presumably end up utilizing her "services" in this regard in the zero transactions costs world. But we are now assuming high transactions costs. And here, according to Coase, it is the duty of the judge to award the rights of a case to the person who, under low transactions costs, would have bribed the other into acceding to his wishes. States Coase (1960, p. 19):

> the situation is quite different when market transactions are so costly as to make it difficult to change the arrangement of rights established by the law. In such cases, the courts directly influence economic activity. It would therefore seem *desirable* that the courts *should* understand the economic consequences of their decisions and should, insofar as this is possible without creating too much uncertainty about the legal position itself, take these consequences into account when making their decisions." (Emphasis added).

This really will not do. Allowing judges such wide discretion is highly problematic because this will render personal and property rights highly uncertain.[13] Further, Coase is making[14] the *normative* claim that under conditions of positive transactions costs whether rape should be legal or not should depend on judicial determination as to the costs and benefits involved in a given specific instance. But the judges simply have no way of knowing which the worse harms are; therefore, any attempt on their part to interpersonally compare utilities in this way is ultimately arbitrary (Mises 1966; Rothbard 1962; Buchanan 1969; Buchanan and Thirlby 1981). Indeed, to champion a philosophy of rights with such implications bespeaks a certain moral opacity.

Let us now return to Demsetz's analysis of the military draft.[15] To repeat, when considered in isolation, a case can perhaps be made that his remarks are amoral, not immoral. But when we add to this the Coasean context, this conclusion becomes difficult to maintain. For now Demsetz must be interpreted as taking the position not only that in a zero-costs world the same people will end up in the army whether we utilize a "buy them in" (voluntary military) or a "let them buy their way

[13]This need not necessarily violate such rights, for, according to the Coase–Demsetz model, the judges *could* make the correct (e.g., just) finding. For another egregious example of Coaseans and insecure personal and property rights, see Wittman (1980). I owe this citation to Larry White.

[14]Strictly speaking, he makes no such claim, at least explicitly. Rather, I am making it for him, in an attempt at a *reductio ad absurdum*. My criticism is not that Coase (1960) favors legalizing rape (under the assumptions made in *the text). Rather, it is that his views logically imply this position. The laws of logic compel him to either give up the views expressed in that article* or *embrace its implications, and embrace the views on rape I attribute to him in the text.*

[15]Regarding the "buy him in *vs* let him buy his way out of the military" example, Demsetz seems to be on the same wavelength as Calabresi and Melamed (1972, p. 1099).

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out" (draft system), but that in a positive transactions costs world the judges are *justified* in making such a determination based on their own subjective assessments of the costs and benefits involved. Once we have reached this point, we have subtly exceeded the realm of the merely positive; we have entered the realm of the normative. Further, we are by logical implication now seriously contemplating legalizing rape, slavery, and even murder.[16] If this is not immoral, it is hard to know exactly what is.[17]

INCOME EFFECTS

I could, were I so minded, end this reply right here. I could, reasonably, refuse to respond to Demsetz's arguments about income effects, psychic income, and indifference curve analysis on the ground that he had already raised these issues in Demsetz (1979, pp. 98–100), and that I had answered them in Block (1995a, pp. 65–74). But I am not one to apply a tourniquet to this process; any criticism of me by Demsetz "merits a response from me." If Demsetz wishes to revisit this issue, I am happy to oblige him.

As I see matters, there are two issues floating around, confusing matters between Demsetz and myself. Let me at least initially call one of them the *ex ante* income effect, and the other the *ex post* income effect, for want of any better terminology.

Consider the latter first. The *ex post* income effect concerns the fact that "an alteration in income distribution generally implies a change in resource allocation, simply because the two parties before the court spend their incomes differently" (Demsetz, 1997, p. 104). This author then continues: "Coase should have no need to make this point explicit." Let me make something as clear as I possibly can: I am in total agreement with Demsetz on this point. I fully agree that this obvious point need not be belabored to an audience of professional economists. I teach it to my introductory classes, and I have no doubt that Demsetz does the same. Indeed, I wonder at Demsetz's patience with me. If I thought him guilty of so elementary a mistake, I am not sure I would have dealt with him as cordially as he has treated me.

However, contrary to him, I never disputed this insight. I plead total innocence as far as disputing this elementary buildingblock of economics, or criticizing Coase

[16]In Block (1996a) I show that the law and economics model of Coase, Demsetz, and Posner can be used to defend O.J. Simpson's murder of his wife (whether or not he actually committed this crime).

[17]Radin (1987, p. 1865) in my view very properly criticizes Calabresi and Melamed (1972, p. 1112) as follows: "On a deeper level, the argument disturbingly suggests that the inalienability rule against slavery would not be justified if the rule were inefficient. If enough (third parties) liked slavery, so that the prohibition would be a cost rather than a benefit to them, slavery would be efficient and therefore (at least according to this argument) acceptable." Although in this case the critique was applied to Calabresi and Melamed, it from my perspective could have applied to any member of the Chicago Law and Economics School, Coase and Demsetz certainly included.

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for not making it explicit. I note that Demsetz (1997) nowhere cites or quotes me making any such error.[18] Yet he does attribute it to me, and "absorbs" no fewer than two pages of *The Review of Austrian Economics* in setting me straight on this issue.

The "*ex ante* income effect" is very different. It is, strictly speaking, no income effect at all. Rather, it involves our old friend, the psychic income charge I leveled at Coase (Block 1977a, 1995a). I reiterate my criticism: the Coase model claims that, under the assumption of zero transactions costs, it does not matter whether the court awards the property right to the polluter or pollutee[19]; resources will be allocated in exactly the same manner in either case. In terms of our previous discussion, either the smoke prevention device will be installed, or it will not, and the judge's decision is irrelevant to that determination.[20] My claim is that in order for this Coase model to work, the loser must be *able* to bribe the winner into changing his behavior; that Coase never specified this proviso; that Demsetz did, but continues to denounce me for demanding of Coase that he spell out in needless detail the specifics of what I am now calling the "*ex post* income effect." In other words, it is Demsetz who is confusing these two concepts. Of course Coase need not have explicitly mentioned the "*ex post* income effect." There is no need. I entirely agree with Demsetz on this. But Coase (1960) did not come to grips with the "*ex ante* income effect;" that is, his psychic income oversight. And no amount of Demsetz's lambasting of me about the "*ex post* income effect" can change this fact.

Demsetz (1997, p. 106) does not see matters in exactly this way. Instead, he avers:

> The substantive issue has to do with whether or not the assignment of right ownership will alter the mix of output when "bargaining transactions . . . are costless [and] changes in the distribution of wealth . . . can be ignored." Coase and I [with a proviso about "free riders"] say no; Block says yes.[21]

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[18]When it suits his purpose, he directly quotes me; see Demsetz (1997, pp. 103, 107). Surely, he would have furnished a verbatim quote from me to this effect if he indeed had evidence of so elementary a mistake on my part.

[19]Or the rapist and the rape victim.

[20]It is of course not irrelevant to the wealth positions of the two contending parties. The court's decision will determine in which direction the bribe must flow, and hence will indeed impact their relative wealth positions.

[21]Demsetz (1997, p. 106, n. 9) gives Demsetz (1979, p. 98) as the source of this quotation. Yet, in Block (1995a, p. 66, n. 9), I stated "Despite numerous efforts, I have been unable to uncover the source of this quotation." This is yet another example of "ships passing by night." I call into question Demsetz's sources. In his reply, does he provide a citation? He does not. It is one thing to be guilty of a failure to give a source for a direct quotation, one time, in Demsetz (1979). But to repeat a mistake (Demsetz 1997), after having had it pointed out, formally, as an error (Block 1995a) is more than just passing curious. As well, Demsetz (1979, p. 105) directly quotes Rothbard without benefit of a citation. I objected to this (Block 1995a, p. 91, n. 31) shoddy scholarship ("It is somewhat difficult to discern whether Demsetz is quoting Rothbard accurately, and in context. This is because Demsetz, again, fails to cite his source. Efforts on the

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The problem I have with this way of putting the matter is that it conflates what I have been calling the *ex ante* and the *ex post* income effects. But Demsetz (1997, p. 106) is having none of this. In his view I am guilty of "renaming income effects as psychic effects."

I don't accept this, but I note that at least we are now communicating. We have finally achieved real disagreement, instead of talking past each other. Why do I reject Demsetz's characterization? It is because for there to be an income effect, a real income effect, there must be an income effect *of* something. For example, the classical case would be a normal or inferior good. Income rises, and then if consumption of a given good rises by an equal or greater percentage rate, we have a normal good. For an inferior good, consumption actually falls. It is easy to reconcile an income effect defined in this manner with what I have been calling the "*ex post* income effect." They are, indeed, the very same thing. But what I have been calling the "*ex ante* income effect" is an entirely different matter. Here, there is no income which rises (or falls). Rather, there is a *lack* of an ability of the farmer, in our case, to bribe the polluter into installing a smoke prevention device. The farmer, that is, lacks wealth or income. His poverty situation does not change; it is constant.

Demsetz (1997, p. 107) maintains that my "last phrase 'because he (the farmer) simply does not have such funds available to him' sounds like an income effect to me" (material in brackets inserted). Well, it doesn't sound like an income effect to me. An income effect must of necessity be an *effect* of something; it must be the result *on* something such as a consumer purchase, *something else*, namely an income change. To put this into the indifference curve[22] terminology that Demsetz can appreciate, an income effect is the effect on purchases of a parallel shift of the budget line. It is clear that there would be an income effect of this sort in what we have been calling the *ex post* income effect. But no such thing occurs, *can* occur, with regard to the problem of psychic income I have raised against Coase.

But wait; not so fast. For it appears that Demsetz (1997 p. 108) has fully anticipated me: "the gardener's[23] budget constraint is different under the two possible court decisions, and that is what I portray in the indifference curve figure to which Block refers."

I agree that the income effect requires a parallel shifting budget line, and that, certainly, the difference between winning and losing the court case will translate

part of the present author to trace down this citation again proved to be of no avail"), but Demsetz (1997) does not take advantage in his reply of the opportunity to make good his oversight of 1979, despite my specifically calling this to his attention. Doesn't Demsetz read what he is ostensibly criticizing?

[22]Austrians of course reject the entire notion as not being compatible with human action. On this see Mises (1966), Rothbard (1962), and Block (1995a, n. 12).

[23]In Block (1977a, 1995a) I called the "farmer" a "gardener," and endowed him with only one flowerpot to indicate that he would not have the wherewithal with which to bribe the polluter.

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into just this phenomenon. However, my criticism of Coase focused on just *one* of these states of affairs, the one where the farmer lost the case. I maintained, and I still maintain, that if we focus on just this situation, there *can be* no income effect; and that, moreover, there is no need to compare the two situations (which, I readily admit, *would* generate an income effect), since I, in criticizing Coase, focused on only the one.

Let us, indeed, as Demsetz (1997, p. 107) several times asks, focus on the last phrase of his quotation from me (Block 1977a, p. 71). It reads "because he simply does not have such funds available to him." To put this into other terminology, this statement depicts a stock, not a flow. I am here concentrating on a moment in time, and on a specific assumption: that the impecunious farmer (e.g., gardener) has just lost his lawsuit. Can he, or can he not, bribe the polluter, as is required by Coase if his zero transactions model is to be valid? If he cannot, then Coase's rendition of the situation is incomplete, as I have charged in 1977a and again in 1995a. The point is, I am *not* here engaging in a comparative static analysis; in contrast, I am instead focusing on merely one situation, one posed by Coase. What is my warrant for doing this? It is because Coase is making *two* separate assertions, each independent of the other, not merely one, as implied by Demsetz.

What are the two? First, there is the claim that if the farmer wins the lawsuit, the polluter will have to install the smoke prevention device at a cost to him of $75, in our numerical example. Fine and dandy, I have no quarrel with this at all. Second, there is the claim that if the farmer loses the case, he will be able to bribe the manufacturer into installing the scrubber. *This* is the *only* claim of Coase concerning psychic income with which I took and still take issue. My point was (in 1977a, 1995a) and still is that this *one* situation requires that the farmer have the money to make the financial offer, and that if he does not, it cannot take place. Since I am concentrating on this single solitary situation, because Coase opens himself up to being interpreted as making this one claim apart from any other he also making, it is totally illegitimate for Demsetz to translate this into a two-stage model, so that he is can concoct out of the whole cloth a change in income, from which he can then generate an income effect. Demsetz (1997, p. 109) accuses me of "changing the name of the income effect to that of psychic effect." I reply that there *is* no income effect in my criticism of Coase (despite the fact that there certainly is one in Demsetz's critique of me). I take issue with Coase in only *one* of his two scenarios: the one where the farmer *loses* his lawsuit. That Demsetz can create out of this a two-stage model replete with an income effect is testimonial merely to his creativity, and inability to come to grips with my analysis of Coase. It is of course *always* possible to generate an income effect, merely by imagining two separate scenarios where income differs, and then tracing an income effect between them. I can even see why (perhaps) Demsetz was led into this error. After all, Coase *does* talk about two scenarios, not merely one (e.g., the one where the farmer loses, and the one where he wins) and this of course opens the door for a Demsetzian "income effect." But I stress that it is a completely gratuitous income effect in this case, since

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Coase made two entirely separate claims, not merely one. That is, he claimed that win *or* lose, his zero-transaction-cost scenario would result in the smoke prevention device being installed, given our illustrative numbers.[24] Making two separate claims, Coase is responsible for defending *both*, each on its own, if need be. I attacked only *one* of them; Coase must defend *it*, in complete isolation from the other. There being only *one* scenario in contention between myself and Coase, Demsetz, riding to Coase's rescue, cannot rely on *both* scenarios, and generate an "income effect" from or between them.

But Demsetz's position is even worse than this. For, suppose I concede to him, merely out of the goodness of my heart, that there are really two scenarios (where the farmer has a different income under each), and that therefore an income effect may indeed be generated. It still does not follow, as Demsetz appears to believe it does, that I am guilty of conflating this income effect with my psychic income critique. On the contrary, under these stipulated conditions, there would be *two* things occurring: one would be my psychic income critique, and another would be Demsetz's income effect. But the validity of the latter would to no degree imply the invalidity of the former. That is, just because Demsetz's income effect is valid, this does not disprove my psychic income critique of Coase.

CONCLUSION

Since, according to Demsetz (1997, p. 101) this will be the last exchange in our debate, I would like to conclude by putting my argument into a broader context.

As I see matters, private-property rights are of crucial importance to civilization.[25] They are what distinguishes us from the barbarians. To the extent we give in to the enemies of property rights,[26] we reduce ourselves.

Yet private property rights have always been under furious attack, and continue to be so. Even though the threat of actual communism seems to have receded, at least for the moment, our universities, newsrooms, and pulpits are still riddled with Marxists. And this is to say nothing of the feminists, the black "studies" professors, the multiculturalists, the postmodernists, and other knots on the tree of knowledge.

These movements are all virulent opponents of private-property rights. But at least they have the decency to come to do intellectual battle while flying the colors of

[24]If our numbers were reversed, then, of course, the SPD would not be installed, no matter who won the case. For example, if the farmer continued to value his crops at $100, but the cost for the SPD is now $150, he would simply refuse to pay for the SPD, and the farmer (even ignoring psychic income, as did Coase) would not pay the polluter $150 to save himself merely $100. On the other hand, if the farmer won, the polluter would again refuse to introduce the environmental amenity, and the farmer, again, would lack the motivation to bribe him to do so.

[25]Our most important private-property right, of course, is that over our own persons. So "human rights" are a subset of property rights. On this see Rothbard (1970, 1973a, 1973b, 1982, 1990) and Hoppe (1989, 1993).

[26]Bethell (1998) supports property rights, but his argument is tarnished by its failure to reject Coasianism. See on this Block (1999a).

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central planning, socialism, economic regulation, government power and dirigisme. It is different with the advocates of the law and economics philosophy, such as Coase (1960), Demsetz (1966), and Posner (1986), to mention only three of its many leading lights. Their doctrines are every bit as much of a threat to private property as these others, perhaps even more, but they enter the public square disguised as, of all things, *defenders* of markets, economic freedom and private property. Their views are thus far more dangerous, and difficult to oppose. As well, their arguments are very much more sophisticated than those of the Marxists, feminists, etc.

This can perhaps be seen in the fact that the latter groups are something of a joke for the community of scholars sympathetic to free enterprise. But the very opposite is true for law and economics. Scholars associated with this perspective command leadership positions of such organizations as the Mont Pèlerin Society and the Philadelphia Society and their journals are among the most prestigious in the economics profession.[27] In the present debate the only issue Demsetz (1979, 1997) is willing to seriously contemplate concerns psychic income. But this is the veritable tip of the iceberg; it is almost irrelevant in this broader context; it is merely a technical mistake of the Coasean Law and Economics program. The real threat to our liberties is from that system of analysis itself which Demsetz refuses to defend against Austrian criticisms.[28]

In rereading these words, they sound a bit hysterical even to me, so well entrenched in the arenas of law and economics is the Chicago School. Nevertheless, I insist, they are literally true. This is because for the Coaseans, there really *is* no such thing as private-property rights; rights, that is, which defend their owner against all comers. Rather, any time there is a dispute over them, they are to be awarded not necessarily to their owners, but, rather, to the parties for whom, in the minds of the judges, ownership will create the greatest amount of wealth for the entire society. How else are we to interpret the Law and Economics School?

If there is one thing that describes private-property rights it is the word "rigid." That is, in any disagreement over land or other possessions, they are to be awarded to their *owners*, according to this doctrine. Coase (1960, p. 38) however, has a very different perspective: "the ordinary law of nuisance would seem likely to give economically more satisfactory results than adopting a *rigid* rule" (emphasis added). I am not here discussing more controversial issues such as applying eminent domain laws to land necessary for national defense; say, property overlooking a harbor city in the eighteenth century. Rather, for Coase, a typical issue

[27]The academic discipline most supportive of the institutions of capitalism.

[28]Medema (1994a, 1994b, 1994c, 1994d, 1995a, 1995b, 1995c, 1996a, 1996b, 1996c, 1996d, 1997a, 1997b, 1997c, 1997d, 1998, 1999,), Medema and Zerbe (1997, 1999), Medema and Samuels (1997a, 1997b), and Medema and Aslanbeigui (1998) have created practically a cottage industry out of defending Coase against criticisms. Unfortunately, he has not yet found the time to respond to any of the Austrian critiques, such as Block (1977a, 1995a, 1996a), Rothbard (1990), Cordato (1989, 1992, 1998), Krecke (1997), and North (1990, 1992).

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concerns a confectioner whose machinery makes noise versus a neighboring doctor who wants quiet for his stethoscope[29]; or an altercation over the responsibility for wandering rabbits. States Coase in this regard (1960, p. 38):

> The objection to the rule in Boulston's case is that, under it, the harborer or rabbits can *never* be liable. It fixes the rule of liability at one pole: and this is as undesirable, from an economic point of view, as fixing the rule at the other pole and making the harborer of rabbits always liable.

In other words, to put this in property-rights language, there are *no* property rights involved. The law of trespass will sometimes be applied (that is, one pole) and sometimes the law of trespass will be totally ignored (the other pole). Applying this logic to ownership over persons, we can then treat murder, rape, and slavery in the same manner (Block 1996a). Sometimes these acts should be prohibited by law; at other times, not. Flexibility, not rigidity, is the watchword.

Let me end with one last example. Coase (1960, p. 2) offers it as his opinion that harm is reciprocal, and that to stop A from harming B is to harm A. What to do? "The problem is to avoid the more serious harm."

As I write these words the government has just settled its lawsuit with the tobacco companies. I don't place the full (intellectual) blame for this on Coase and his Law and Economics movement, but surely this raid on the tobacco firms is at least *consistent* with their views. How so? Avoiding the more serious harm is logically equivalent to placing responsibility on the least cost avoider of harm. Well, who is the least cost avoider of the harm of cigarettes: the ultimate consumer or the producing firm? For the Austrian this is an unanswerable question, given the invalidity of interpersonal comparisons of utility (Mises 1966; Rothbard 1962; Buchanan 1969; Buchanan and Thirlby 1981). But the Chicago School does not allow such niceties to stop it from its self appointed rounds. For them, there is no question: what with economies of scale, the division of labor, etc., unavailable to consumers, the corporations (e.g., big tobacco, guns) are the least cost avoiders; hence, the justification of the lawsuits against them.

Following the tobacco example are cities now in the process of suing gun manufacturers for the harm created by these products. This, too, can be understood in Coasean terms. For, surely, at least in the minds of Coasean oriented judges, the producers of guns can at lower cost than consumers decrease the attendant harms. This, it will be appreciated, will increase "wealth."[30] This legal regime is sometimes objected to on the grounds that those responsible for the harm done by guns are the consumers, not the producers. But this objection completely misconstrues the Law and Economics model.[31] Not for it to focus on so

[29]Coase (1960, pp. 8–11), where he discusses *Sturgis v. Bridgeman* (11 chap D. 852[1879]).

[30]The quote marks indicate that no such determination can be made without resort to illegitimate interpersonal comparisons of utility.

[31]The same applies to the point that if gun manufacturers are responsible, then so are the suppliers to them of metal, lead, springs for trigger mechanisms, etc. And this is to say nothing of

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philosophical a concept as responsibility; in this way lies reliance on private property rights, to be avoided at all costs. On the contrary, the Coaseans rely on a pure monetary calculation. And here, at least in their view, the producers can at lower costs than the consumers obviate harm created by guns.

I am not saying that the Law and Economics movement explicitly calls for a state attack on cigarettes or guns.[32] (Does anyone doubt that auto manufactures will one day be added to this list?) I do not claim that Coase is directly responsible for our product liability fiasco in general. I am aware of no "smoking gun" in this regard. However, it cannot be denied that this branch of the Chicago School supplies the intellectual underpinnings of these attacks on the institution of private property. Demsetz could have replied to these more substantive critiques of his and Coase's position. Instead, he dismissed them (Demsetz 1997, p. 102) as "mere ruminations on morals" and chose to confine himself to very narrow technical issues. Too bad.

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the people who transported these weapons, nor of those who built the trucks and the roadways which facilitated these transfers into the hands of consumers.

[32]A Chicagoan, Lott (1998) has found evidence of a positive (e.g., defensive) role for guns. This is irrelevant to the point I am making. My claim is that if the Coaseans stick to their principles, focus solely on the fact that guns (also) have negative side effects, and ask who is in a better position to alleviate these harms, producers or consumers, they will tend to cast their baleful eyes on the former.

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POST-MODERN ECONOMICS: THE RETURN OF DEPRESSION ECONOMICS. BY PAUL KRUGMAN. NEW YORK: W.W. NORTON AND COMPANY, 1999

Paul Krugman is a Keynesian, and I do not mean New Keynesian either. He is a devout Keynesian of the most paleo variety. To understand this fact is to understand his latest spin on world economic events, *The Return of Depression Economics*. In this relatively brief and breezy work, Krugman uses Keynes's *General Theory* to explain the recent financial crises of Latin America and Asia. Consequently, in his tale of economic recessions, all of the usual Keynesian suspects appear: the abuse of aggregates, the liquidity trap, crabby dismissals of "orthodox views of economic policy," chronically unstable financial markets ruled by animal spirits, and monetary inflation as the wonder sedative for an economy plagued by panic attacks.

While damning the free market with the faintest of praise, Krugman's book provides us with an excellent example of why it is so important to get the analysis right before prescribing policy solutions for an economic problem. In Krugman's case, bad analysis leads to bad policy recommendations.

Krugman's main analytical model is a quintessential example of his strengths, such as they are, and weaknesses. While attempting to explain the workings of the economy in simple terms that the general population can readily understand, he hitches his analytical wagon to an article using a baby-sitting co-op in 1970s Georgetown as a model for the macroeconomy.[1] As a result, Krugman makes fundamental errors regarding how the economy works. In an attempt to efficiently ration baby-sitting services among the members, the baby-sitting co-op issued coupons. Each member family paid a baby-sitting ticket whenever they used the co-op and received a ticket whenever they baby-sat for one of the other members of the co-op. Purposely leaving out the details, Krugman tells the reader that members of the co-op suddenly increased their demand to hold baby-sitting tickets. Consequently, there was not enough aggregate baby-sitting demand for the services of those members in the co-op who were looking to baby-sit in order to increase their ticket incomes. In other words, Krugman explains, the baby-sitting co-op went into a recession.

[1]Joan and Richard Sweeney, "Monetary Theory and the Great Capital Hill Baby-sitting Co-op Crisis," *Journal of Money, Banking, and Credit* (1977), pp. 86-89. Incidentally, although Krugman gives the article a date of 1978, Richard Sweeney's vita lists the date as 1977.

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The attraction of this model is its seductive simplicity. Krugman is often quite good at taking issues and problems the general reader finds unmanageably complex and explaining them in ways simple to understand. While this is, of course, a virtue, it is only a virtue if his explanation accurately reflects reality. The chief responsibility of the economist is to get the analysis straight. For this, the baby-sitting model will not do.

The fundamental error of this model is that it only has one good: baby-sitting. This leads the reader to think of economic output as if all goods produced in the economy are homogenous units making up one aggregate. The lesson of the model is that if a recession occurs, it must be that there is not enough demand for this homogenous output. In the baby-sitting model, the problem is that members demanded to hold too many tickets. For the economy as a whole, as Krugman views it, "a recession is normally a matter of the public as a whole trying to accumulate cash" (p. 11). People decrease spending in order to increase their cash balances. The supply of goods not demanded sits idle, and unemployment results.

In reality, of course, the plethora of goods bought and sold in the world economy are heterogeneous. What causes a recession is not too little "aggregate demand" or "too much capacity" due to overinvestment. Recessions are a product of *malinvestment*, resulting from government intervention in credit markets. If the government increases the money supply through credit expansion by artificially lowering interest rates, an incentive is created for entrepreneurs to invest in too much production of *some* higher order goods and not enough production of other lower order goods. It is not that too much investment is occurring in every sector of the economy, rather, investment that is occurring is being directed toward producing the wrong things, from the point of view of the people who make up society.

A very telling characteristic of Krugman's analysis is that he argues that recessions will persist until aggregate demand picks up due to monetary inflation. Again Krugman, alluding to both the baby-sitting co-op and the economy, states that the recession "can normally be cured simply by issuing more coupons" (p. 11). The immediate question that should come to mind is why the surplus was not eliminated by a fall in the price of baby-sitting. We do not know. Krugman does not even bring it up! The model assumes that the prices are fixed at a one-ticket-to-one-night-of-baby-sitting ratio. This lulls the reader, and it seems Krugman himself, into forgetting that prices will adjust downward to eliminate any surplus due to a drop in demand. It is curious, to say the least, that in a book with the word *economics* in the title, the author does not get around to discussing even the mere possibility of a price decrease in the face of a surplus until page 155, that is, until the reader has read 92 percent of the text.

Nevertheless, this is the story that Krugman tells regarding the world's recent financial crises. In his view, the Asian and Latin American financial breakdowns were simply a problem of not enough demand. Krugman does not explain why aggregate demand decreased, except by claiming that a lack of investor confidence in those

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economies fed on itself, creating full-fledged panic. Evidently, that is what we get for allowing the animal spirits to roam free in the market.

Of course, to paint such a threatening picture of the free market, Krugman must make it an easy target. He begins with cogent arguments that should have led him down a better path. Krugman rightly notes the positive effects of decreasing tariffs and regulation in Third World countries and he correctly sees increased capital accumulation and technology as key determinants of the economic development that has occurred in Latin American and Asia. He also seems skeptical of government's ability to manage an economy, particularly due to the amount of corruption that takes place in any country where the state calls the economic shots. He even implies that capital accumulation itself is not enough; it must be invested where it will make a profit. Unfortunately, he does not follow his logic to the conclusion that private-property rights and the profit and loss system of the free market are necessary for efficient investment.

Krugman makes his case for government intervention in typical Keynesian fashion by stating that the free market can simply just go bad. He cites examples such as Brazil, Argentina, Thailand, and South Korea who decreased regulations and tariffs and privatized industry and subsequently reaped economic growth. Then in this more *laissez-faire* environment, a crisis occurred. It is clear to Krugman that the free market cannot be left on its own to persistently increase wealth and incomes. Rather, the moral of the story is that the free market, while providing a certain level of prosperity, repeatedly becomes unstable due to the volatile behavior of speculators, leading to oscillations in confidence. As Krugman puts it, "the world is lurching from crisis to crisis, all of them crucially involving the problem of generating sufficient demand" (p. 156).

This brand of depression economics suffers from at least two fundamental errors. In the first place, it completely misconstrues the very reason for economic activity. The economic problem that man has worked at solving throughout history has never been insufficient demand. It is, in fact, just the opposite. Men must make economic choices for the very reason that goods are scarce. That is, the supply of goods freely available from nature is *less than* the demand for them. Consequently, in order to survive and prosper, humans must make choices and direct the scarce factors of production toward their most highly valued use. The fundamental economic problem always has been and will continue to be scarcity.

Second, Krugman's characterization of the economies of Asia and Latin America before the crisis overlooks the very catalyst that sowed the seeds for the panic: government inflation. While it is true that the countries he cited were making progress in freeing their economies, they were still intervening in the economy via their central banks. Preceding their respective economic crises, all of the countries cited by Krugman set themselves up for trouble ahead, not by freeing their economies, but by rapidly increasing the supply of money. From 1985 to 1990, Japan inflated its money supply at an annual rate of 10.5 percent. From 1991 through 1995, South Korea increased its money supply at an annual rate of 17.3

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percent. From 1992 through 1996, the annual rate of inflation for Indonesia was 30.6 percent, while that for Thailand was 13.8 percent. Krugman neglects to mention these facts; it is as if he views inflation as standard operating procedure in the free market.

Not surprisingly, Krugman's faulty analysis leads to faulty policy conclusions. Following his mentor, Krugman recommends hefty monetary inflation as the cure for financial crises. He points to World War II as the cure for the Great Depression and to post-World War II central bank money manipulation (what he calls the "Keynesian Compact") as the key to financial stability.

Dismissing what he takes for Austrian business cycle theory with the pejorative "hangover theory," Krugman advocates massive inflation in Asia and Latin America to solve their economic ills.[2] He definitely does not think that the free market should be allowed to liquidate losses. As Krugman argues, "There is no good reason...why misguided investments in the past should leave perfectly good workers unemployed, perfectly useful factories idle" (p. 160). He repeatedly calls for increases in the money supply instead of recognizing that inflation is what created the mess in the first place.

The problem is even worse in Japan, in Krugman's eyes, because it has fallen into the old liquidity trap. Normal credit expansion through artificially lowered interest rates will not do the monetary trick, because the Japanese want to hoard cash. The solution, according to Krugman, is for the government to print up and spend Yen until the Japanese citizen forms inflationary expectations. Once this occurs, the Japanese will decrease their demand to hold money, because they will be expecting its value to decrease. For other Asian countries where the crisis is particularly acute, Krugman advocates capital controls in order to forestall the next level of panic in the financial markets. Krugman, like Keynes, thinks we can save some semblance of the free market with the right amount of intervention.

Austrian theory has shown that the problem of recession is not "idle capacity" *per se* and that increasing the money supply in order to put such idle capacity back to work will fail to solve the problem. In fact, increasing the money supply via credit expansion only exacerbates the malinvestment. New funds that are borrowed will be used by businesses to produce even more higher order goods and the economy is knocked even further out of balance. Additionally, some of the capital goods that are malinvested during the inflationary boom are nonconvertible. They are only suitable for use in producing a particular good. If investment in that good proves to be a bust, that nonconvertible capital is completely wasted. It cannot be recovered, and increasing the money supply will not make it more suitable for alternative production. The only way to replace lost capital stock is through saving, not inflation. The solution is to free the market, giving entrepreneurs the

[2]Although he never identifies the "hangover theory" as Austrian as he has done elsewhere, he is really criticizing Schumpeter, whom he mentions by name, having apparently never read Mises.

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incentive to save again and invest in those lines of production most in demand by the public.

Ironically, after Krugman vows to the reader that he, objective social scientist that he is, will resist the "inclination to moralize"; he concludes by faulting the advocates of the free market for pride and prejudice. Krugman argues that pride in a free market is "a luxury none of us can afford in a world that has turned out to pose unsuspected risks" (p. 166). He accuses economists who recommend allowing the market to freely liquidate unprofitable investments after an inflationary boom of suffering from a prejudicial attachment to "orthodox" theories and he ends his work with a subtle gibe at those who maintain that unemployment persists during a bust because interventionist measures hinder the price adjustment process.

Krugman closes with a revealing statement, "the only important structural obstacles to world prosperity are obsolete doctrines that clutter the minds of men." Here Krugman implies that he does not really believe in economic truth. In his mind, economic laws that were once perfectly valid are now "obsolete." Supply and demand theory may have been true before 1936, but now we need to make way once again for the "new economics," what Krugman calls "depression economics."

What counts, of course, is not whether an economic theory is old or new, but whether or not is it true. Krugman's depression economics might make for good reading for today's postmodernist who is bored with the notion that there is still an inverse relationship between price and quantity demanded, *ceteris paribus*. Those economists who still believe in economic laws, however, will remain less than pixilated. Moreover, if those individuals who are actually experiencing the crises he writes about follow his prescriptions, they will have every right to remain depressed.

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Millennium Doom. Fallacies about the End of Work. By Mauricio Rojas. London: The Social Market Foundation, 1999

Myths about the evil consequences of capitalism are never in short supply. Most famous is the Marxist immiseration theory, according to which the industrial revolution brought hardship and misery for the working classes. Greedy entrepreneurs destroyed idyllic pre-capitalist communities and forced men, women, and children into factories and mines where they would not see the sun again and would labor for the exclusive benefit of their exploiters. Since they did not themselves own the means of production they had to accept ever-declining wage rates in order to assure their bare survival. And, were it not for the enlightened reforms of capitalism imposed by social-democratic parties and unions, the working classes would sooner or later have died out under the heartless rule of competition.

As we know by economic reasoning and historical analysis, none of this is true. Entrepreneurs gave millions of pitiable paupers the opportunity to become self-reliant wage earners. They enabled women and children to survive by paid work rather than starve in misery and deprivation. Each year they hired millions of new workers, absorbing the greatest increase of population figures in the history of mankind. And despite this relentless competition by new workers entering the labor market, the competition between entrepreneurs was even higher. The overall effect of unchained capitalism was an *increase* of the real income of the working classes to an unprecedented level. *Laissez-faire* capitalism could have been a true idyll were it not for the interventions of social-democrats and unions, which dropped wage rates below the level they would otherwise have reached.

All of this is long since established, and since the spectacular failure of applied socialism even the most ardent critics of capitalism have become silent about its alleged economic inefficiency. Instead, the critics have discovered new shortcomings of free enterprise, like its allegedly destructive effects on the environment or its propensity to produce *too much*. A famous forerunner of these new myths about capitalism is John Kenneth Galbraith, who was the first economist ever to uncover the unbearable consequences of enjoying too many consumers' goods.

Now Galbraith has found good company in a group of writers who recently discovered a new ugly face of capitalism, namely, its current propensity to run out of work. The advocates of the end-of-work theory, as we might call it, claim that we are at the beginning of an age in which the great machinery of capitalism becomes

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more and more independent of workers. Owing to automation spurred by new information technologies, as well as to other influences, production can increasingly do without actual people. As a consequence, jobs are simply no longer available. Mass unemployment becomes a phenomenon built into the capitalist mode of production in this historical phase.

These ideas have attracted widespread attention in Sweden, France, and Germany. Especially Viviane Forrester's 1996 book *L'horreur économique* has reached many French and German readers. It is therefore laudable that Mauricio Rojas addresses the fundamental question whether the phenomenon that the end-of-work theory ascribes to global capitalism exists at all. He confronts the allegations of the advocates of this theory with easily available statistical material. In particular, he deals with four claims:

1. History has entered a new epoch in which millions of jobs are "disappearing" while very few new ones are created: the result is mass unemployment which cannot be remedied under capitalism;

2. The ever-green theory that new technology (in this case the Information Technology [IT] revolution) makes many more jobs superfluous than it creates in other fields;

3. The growth of employment figures in the U.S., being the obvious counter-example to the end-of-work theory, is irrelevant because these new jobs represent low-skill and low-pay employment ("trash jobs"); and

4. Jobs disappear, or tend to become paid less, in developed countries because capital and enterprise are moving to third-world countries where labor is cheap.

Rojas makes his points in a very concise way. His book, which is actually not much more than a brochure, contains just a few well-selected charts and tables accompanied by brief discussions. This is clearly an advantage for a work that aims at counterbalancing the pernicious effects that the end-of-work theories have had on mass opinion.

The results of this little study are by and large devastating for the end-of-work theory. The very phenomenon that this theory seeks to explain does not exist at all. The end of work is a myth.

As Rojas points out, there is no decrease, rather a marked *increase* in employment. In the period between 1975 and 1995, employment increased by more than 40 percent in the U.S., Canada, and Australia, and by more than 20 percent in Japan and Switzerland. Even in the European Union there has been a slight overall increase in employment. This reflects a huge increase in the world population, with the world's labor force growing by 630 million persons between 1980 and 1994. As in the nineteenth century, capitalism has again managed to integrate countless people, especially young and poor persons, into a world-encompassing network of division of labor. The above figures furthermore contradict the idea that IT leads to unemployment. In fact, the leaders of IT industries, Japan and the U.S., have experienced a marked growth of employment figures.

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The trash-job argument against U.S. job-creation is also a myth. Here too a short glance at elementary statistical figures shows that almost 50 percent of the new jobs have been created in occupations requiring high professional skills, and another 30 percent have been created in medium-skill occupations. In terms of income, 70 percent of the new jobs created in the U.S. were paid higher than the median income.

These facts represent a smashing *prima-facie* refutation of the very existence of the phenomenon that the end-of-work mystics deplore. As Rojas states,

> The remarkable thing about all this is that the figures now presented are available to anyone who really wants to find out the true state of things. But it seems as if the fallacies about the end of work have started to lead a life of their own beyond all objective appraisal. They have become myths, and myths have seldom anything to do with statistics or logic. (p. 20)

Rojas's study is weakest in its discussion of fallacy number four; that is, the claim that jobs disappear, or tend to become paid less, in developed countries because capital and enterprise are moving to third-world countries where labor is cheap. Rojas correctly points out that certain *kinds* of production (and jobs) shift from highly industrialized countries to less industrialized countries, but are replaced by *new* kinds of production and jobs. Unfortunately, he does not place due emphasis on this crucial insight and illustrate it with available statistical material. Instead, he makes a futile attempt to refute the end-of-work advocates by their own means, arguing that the process of dislocation of established types of production and emergence of new types of production has on the whole operated mainly in favor of the industrialized countries. He substantiates his claim about the net effect of this process by the fact that the countries of South, Southeast, and East Asia "are importing more than they are exporting" (p. 50). Yet, if anything, this fact would rather speak *against* his claim. Since when is it advantageous to export for export's sake? Rojas seems himself to have fallen prey to an old mercantilist fallacy.

Also, his discussion of the importance of international capital flows is insufficiently substantiated. He claims that the Asian countries "are developing mainly because of an unparalleled native capacity for saving and investment" (p. 51). However, he fails to compare the volume of domestic savings in these countries with their net import of capital, which is astounding since he himself emphasizes that these countries are importing much more than they are exporting.

In short, Rojas tends to downplay the existence of any *net* capital movements and to argue that, if such net capital movements existed at all, they operate only in favor of the capitalist West. Clearly, this contradicts the facts that Rojas himself points out with so much emphasis. Most importantly, however, it has nothing to do with the fallacy that Rojas seeks to refute. *Even if* there were huge net exports of capital from Europe and North America to Southeast Asia, this would imply nothing for the overall quantity of jobs in the West, and it would imply increasing rather than decreasing incomes in the capital-exporting countries. Capital moves

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where it can be most profitably employed. However, one should not think that this continuous redistribution of capital implies a redistribution of income among countries. International capital movements are beneficial to *all* consumers in the world, and in particular to the consumers of the countries from which capital is exported.

Rojas advances other arguments that seem to be flawed. For example, he thinks that the present crisis affecting large parts of Asia "is not more than a natural but painful part of the most amazing growth process ever contemplated on earth" (p. 10), but he does not explain *why* crises are a necessary by-product of growth.

Much can be said in favor of Rojas's decision to focus on the statistical refutation of the very phenomenon that the end-of-work advocates pretend exists. However, I wish he would have dedicated some space to discussing related topics. For example, he nowhere discusses why job creation is such a good thing, whereas one could argue that the fact that more and more women join the work force reflects a general impoverishment of society. He should also have pointed out with much more emphasis that the statistical evidence suggests that unemployment is highest and job-creation least where capitalism is weakest and government interference in the labor market most pronounced. The best examples for this phenomenon are Sweden, Germany, France, Italy, and the United Kingdom. It is unfortunate, but not really surprising, that the end-of-work myth is particularly popular in these highly regulated countries where job creation has been comparatively weak.

Rojas's work displays the typical qualities and shortcomings of most present-day work in applied political economy: careful and pertinent in the selection of the statistical evidence, weak in economic argument. Still this is a very useful study and it deserves at least as wide an audience as the end-of-work fallacies.

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DEVELOPMENT AS FREEDOM. BY AMARTYA SEN. NEW YORK: ALFRED A. KNOPF. 1999.

Amartya Sen's wide-ranging book grasps a point ignored by many economists. Economists are generally alive to the virtues of markets, and few since the collapse of communism have a good word to say about central planning. Commonly, though, economists defend markets strictly on grounds of efficiency: the free economy "gets the job done" in a way that socialism cannot match.

Professor Sen sees deeper than this. The freedom to trade counts as an intrinsic human right, valuable apart from its contribution to economic growth.

> To be *generically against* markets would be almost as odd as being generically against conversations between people. . . The freedom to exchange words, or goods, or gifts does not need defensive justification in terms of their favorable but distant effects. . . . The contribution of the market mechanism to economic growth is, of course, important, but this comes only after the direct significance of the freedom to interchange—words, goods, gifts—has been acknowledged. (p. 61)

Our author elaborates this insight in a striking way. Familiar arguments prove the inefficiency of centralized socialism. A socialist system fails, as compared to the market, "both because of the economy of information (each person acting in the market does not have to know very much) and the compatibility of incentives (each person's canny actions can merge nicely with those of others)" (p. 27).

Let us suppose, though, that these arguments allowed an exception. However unlikely, let us imagine that a centralized system in a given case turns out equally efficient to the market. (Incidentally, I am not altogether clear that Professor Sen thinks this case impossible. He says that the case is "contrary to what is generally assumed" (p. 27) and that the argument for the market mechanism is strong; but he does not go beyond this.)

Still, our author claims, we would have reason to reject the centrally controlled system. "It is not hard to argue that something would be missing in such a scenario, to wit, the freedom of people to act as they like, in deciding on where to work, what to produce, what to consume and so on" (p. 27).

That is well said; and one can easily imagine this line of thought extended to a resolutely Rothbardian conclusion. Our author, well-known as a social democrat, declines this proferred extension. Libertarianism, he contends, suffers from a radical flaw.

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Is not a free market order consistent with disastrous states of affairs? Can we not have a famine in which everyone has his free-market rights respected? "[E]ven gigantic famines can result without anyone's libertarian rights (including property rights) being violated. The destitute such as the unemployed or the impoverished may starve precisely because their "entitlements'—legitimate as they are—do not give them enough food" (p. 66).

The point of Professor Sen's argument is not readily apparent. A free market order delimits a sphere of property rights; it is not, as Murray Rothbard never tired of insisting, a complete system of morality. Why is it even a *prima facie* consideration against the free market that under it, certain people may not have a *right* to food? It does not follow that these people *will* starve: that depends on the charity of those more fortunately situated. And of course a supporter of the market can maintain that those who refuse to help their fellow citizens have acted contrary to moral duty.

All that the libertarian contends in the famine case is that forcible interference with property rights cannot be justified by the need of others for food. Our author will no doubt dissent; the unfortunates' need for food, he will say, morally justifies taking property. Well and good: here he has a substantive disagreement with libertarians.

I do not propose to assess here these competing claims about rights. My point is a more limited one. If Sen thinks that libertarians have the wrong set of rights, let him, if he can, show this. But it is *not* a point against libertarianism just to say that it is an incomplete theory of morality. If everyone committed suicide, this need involve no violation of property rights: does *this* fact show a defect in market morality?

Perhaps (though I doubt this), Professor Sen's point about famines and the market differs from what I have so far represented it to be. He may intend an empirical claim: The free market, he may think, cannot cope adequately with sudden food shortages.

If this is his point, he has failed to make an adequate case for it. He describes in some detail (pp. 166ff) measures he thinks necessary to prevent sudden food shortages from turning into famines. These measures involve concerted action of various kinds: but why must these come about only through governmental coercion? Are not people who wish to institute schemes of the required kind perfectly free in a market society to do so? Sen would probably claim that externalities block effective voluntary action on the required scale; but he does not argue the point here.

Our author embeds his famine example in a more general claim about libertarianism. It, along with other moral systems such as utilitarianism, fails to consider enough relevant information. Once the libertarian sees that rights as he defines them have been violated, that ends the matter. No other factor is relevant. In like manner, the utilitarian flattens out morality so that only his favored

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dimension counts. A true conception of morality, Sen holds, considers all relevant factors. The heterogeneous character of morality cannot be denied, libertarians and utilitarians to the contrary notwithstanding.

One may readily concede to Professor Sen that his "capability approach," which takes into account a varied list of consequentialist and neo-consequentialist factors, rests on a wider "informational base" than libertarianism. But to assume that the wider the base, the better, is blatantly to beg the question. Just the point at issue is which considerations are relevant. It would not be a good argument for libertarianism that this system is simpler than Sen's: in like fashion, it is a poor argument for Sen's system that his view considers more factors than competing theories. Again, if Sen's point is not "the more factors, the better," but rather that libertarianism ignores obviously relevant considerations, this is a substantive disagreement. But then Sen must argue for his claim, or allege it to be intuitively evident that his claim is true. It does not suffice, as he apparently thinks, to point out that libertarian ethics sins by omission. That just *is* the question-begging "more is better" thesis.

I have here been able to touch on only a few themes in this rich and complex book. Many other points deserve the reader's careful attention. I found especially valuable the author's criticism of the coercive Chinese population program (pp. 219ff) and his cogent argument that identical choice behavior does not imply identical utility functions (pp. 68–69).

DAVID GORDON
Mises Review

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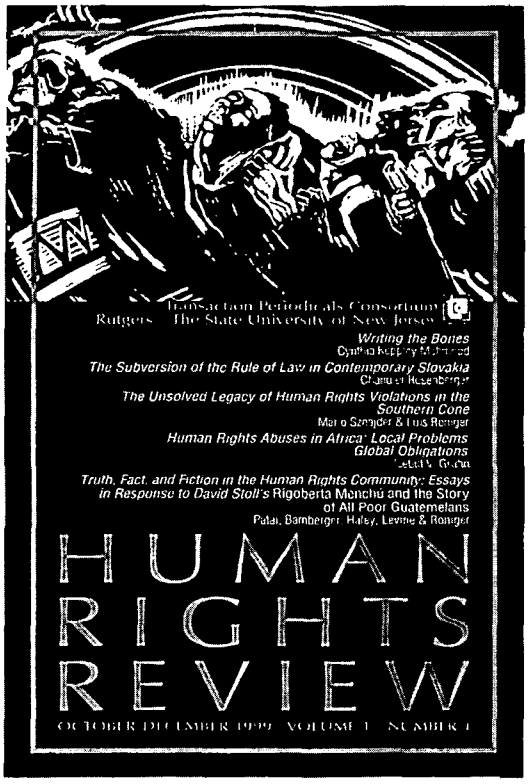
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